

Kansas Maternal and Child Health

2008 Biennial Summary



**Kansas Department of Health and Environment
Bureau of Family Health**



Kathleen Sebelius, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

Division of Health

September, 2008

Dear Fellow Kansans:

It is my pleasure to introduce you to the 2008 Maternal and Child Health Biennial Summary for the State of Kansas. This is our department's second issuance of these data; the first was issued in 2006. Feedback from that document was resoundingly positive.

We heard from policy-makers, program managers, other decision-makers and advocates alike that the data were useful in getting an overall picture of the health of Kansas mothers and children. In particular, the document helped them understand the significance of the data. The analyses of disparities served to underscore the need for targeting services and resources to certain populations and areas of the state.

During the coming year, we plan to use the data in this report as part of our five-year MCH State Needs Assessment. A requirement of our federal MCH grant program, the State needs assessment will be used by stakeholders to set our state MCH priorities through 2015. We hope that this document may pique your interest to participate in the state needs assessment process.

To let us know what you think about this Summary and what it says about the health status of Kansas mothers and children, email Jamie Kim at jkim@kdhe.state.ks.us.

Sincerely,

A handwritten signature in black ink that reads "Richard J. Morrissey". The signature is fluid and cursive, with the first name "Richard" being more prominent.

Richard J. Morrissey
Interim Director of Health

KANSAS MATERNAL AND CHILD HEALTH

2008 BIENNIAL SUMMARY



September 2008

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EXECUTIVE SUMMARY

- ❑ For Kansans, 2006, Low Birth Weight (LBW) and Very Low Birth Weight (VLBW) infants contribute heavily to the total infant mortality rate. Almost two thirds (61.5%) of infant deaths occurred among the 7.2% of infants who were born at LBW. Similarly, 45.1% of infant deaths occurred among the 1.3% of infants born at VLBW.
- ❑ For Kansans, 2006, the risk of delivering a LBW infant is greater among Black mothers (all ethnicities) and differs by maternal age, with the highest risk for the youngest and oldest mothers regardless of race.
- ❑ In Kansas, 1999-2006, there is an increasing trend in the percent of women 18-44 who lack health insurance with about 19.7% of women lacking health insurance in 2006. In 2006, women at greatest risk of being uninsured are Hispanic, have less than a high school education, earn less than \$24,000 and reside in a densely-settled rural county, and are widowed, divorced or separated. The percent of Hispanic women ages 18-44 with no health insurance is increasing and was about 52.0% in 2006.
- ❑ The percent of Kansas WIC infants (Special Supplemental Nutrition Program for Women, Infants, and Children) ever breastfed has increased by 13.8% in the last 10 years from 58.0% in 1997 to 66.0% in 2006. The percent of infants breastfed at least 6 months has also increased to 42.2%. However, the percent breastfed at least 12 months has decreased to 16.9%.
- ❑ The percent of Kansas WIC children who are overweight has increased by 70.4% from 8.1% in 1995 to 13.8% in 2006. For 2006, 17.4% of Hispanic children participating in WIC were overweight.
- ❑ In Kansas, for adolescents/young adults ages 15-24 (2005-2006), 75.5% of unintentional injury deaths were caused by motor vehicle crashes, 8.8% were caused by poisonings, and 3.1% were caused by drowning. In White (non-Hispanic and Hispanic) youth, unintentional injury caused the highest percent of injury deaths. However, in Black (non-Hispanic) youth, homicides caused more deaths than unintentional injuries.
- ❑ Overall, Kansas children with special health care needs (CSHCN) did better than U.S. CSHCN. The 2005-2006 National CSHCN Survey estimates that 28.6% of Kansas CSHCN ages 0-11 served by care systems met all five core outcomes compared to 20.4% of the U.S. and Kansas ranked first in the nation. For CSHCN ages 12-17, 20.2% met all six* core outcomes compared to 13.7% of the U.S. and Kansas ranked second in the nation. (*The sixth, transition to adulthood, was asked only for CSHCN ages 12-17.)
- ❑ In Kansas, 50.3% of youth with special health care needs receive services necessary to transition to all aspects of adult life compared to the national average of 41.2%. Generally, the vocational/education transition is more comprehensive than transition to adult medical services.
- ❑ In Kansas, an estimated 62.9% of CSHCN have adequate health insurance coverage compared to the national average of 62.0%. “Adequate” private and/or public insurance is defined as access to health services including preventive care, primary care and tertiary care. Many Kansas families have policies that cover only well visits or catastrophic care.

INTRODUCTION

This second edition of the Kansas Biennial Summary of Maternal and Child Health (MCH) was prepared in the context of many changes in federal and state health policy relating to mothers and children. In the past decade, new policies have emerged relating to health insurance, welfare reform, federal and state funding reductions, provider workforce shortages, and rapid advances in technology, among others. All of these impact the health status of our mothers and children. In turn, changes in the health status of the MCH population reflect changes in the health status of the general population.

Kansas has made steady progress in developing program capacity to collect and analyze MCH data, and to monitor trends in child health that will guide program and policy decision-making. Each year for several years, as part of the federal application for MCH Services Block Grant funding, a vast amount of information and data has been collected. In addition to dramatic improvements in data quality, Kansas is now able to see trends in Kansas' performance on national and state priority measures, health status and outcomes, and the capacity of our health system to meet the needs of mothers and children, including children with special health care needs.

In addition to federal reporting, an important use of the MCH Services Block Grant data is to prioritize MCH needs for the State. A 5-Year MCH State Needs Assessment is conducted as part of the federal requirements for this grant. Kansas' most recent assessments called MCH 2005 and MCH 2010 can be viewed at the website: www.kdheks.gov/bcyf. The assessments are major undertakings involving diverse groups of stakeholders. The purpose of the assessments is to focus on priority work.

For the period 2006-2010, the MCH priorities for Kansas are as follows:

Pregnant Women and Infants

- ✓ All women receive early and comprehensive health care before, during, and after pregnancy
- ✓ Reduce preterm births and low birth weight
- ✓ Increase initiation and duration of breastfeeding

Children and Adolescents

- ✓ Address behavioral/ mental health
- ✓ Decrease overweight
- ✓ Reduce injury and death

Children with Special Health Care Needs (CSHCN)

- ✓ Increase care within a medical home
- ✓ Improve transitional service systems
- ✓ Decrease financial impact on families

Until now, there has been little effort to share these data and priorities with the general public, private providers and others despite the usefulness of the data for a wide range of activities. It is the intent that this document will change all that. The 2008 Biennial Summary of MCH is the second summary providing an overview of MCH in Kansas. We hope readers will look forward to this biennial publication and analyses.

Purpose and format of the report

The purpose of the report is to provide useful information on MCH in Kansas for health care providers, public health workers and policy makers. The report presents summaries of three population groups: Women of Reproductive Age and Infants, Children and Adolescents, and Children with Special Health Care Needs (CSHCN).

The report is divided into six sections. Sections I - IV present summaries of 26 important health issues for women of reproductive age and infants (Section I), children and adolescents (Section II), children with special health care needs (Section III), and MCH health systems indicators (Section IV) in Kansas. Each of the health issues is presented with a brief overview of the Kansas goal, definition, significance of the health issue, and Healthy People 2010 Objectives when available. The race and ethnicity categories presented are consistent with Office of Management and Budget's (OMB) 15 categories whenever possible. Through 2004, vital records race data is categorized according to the 1989 revision of the Birth and Death certificates. Thus, the race categories used in this document, where the data source was Kansas Vital Statistics, are White, Black or African American, American Indian or Alaska Native, and Asian and Pacific Islander. Ethnicity includes Hispanic and non-Hispanic (regardless of race).

A summary of the health issue in Kansas including key statistics and trends is supplemented by tables and graphs with the latest data available. Rates have been calculated from the appropriate most recent available census estimates to adjust for population size and allow for more meaningful interpretation of the data. In this report, data analysis and display were based on suggestions of the Maternal and Child Health Bureau, Health Resources and Services Administration. (Refer to the Technical Notes on page 98 - Table 1 includes the guidelines for measures with small sample sizes used in this document.)

Section V includes special studies and reports. Section VI includes a map of Kansas with county names, a list of county abbreviations, technical notes, and glossary.

Acknowledgments

We would like to thank all the physicians, nurses, hospitals, laboratorians, county health department staff, and others who participated in providing data. We would also like to acknowledge the Bureau of Family Health staff for their support and assistance.

Linda Kenney, MPH
Director
Bureau of Family Health

SECTION I

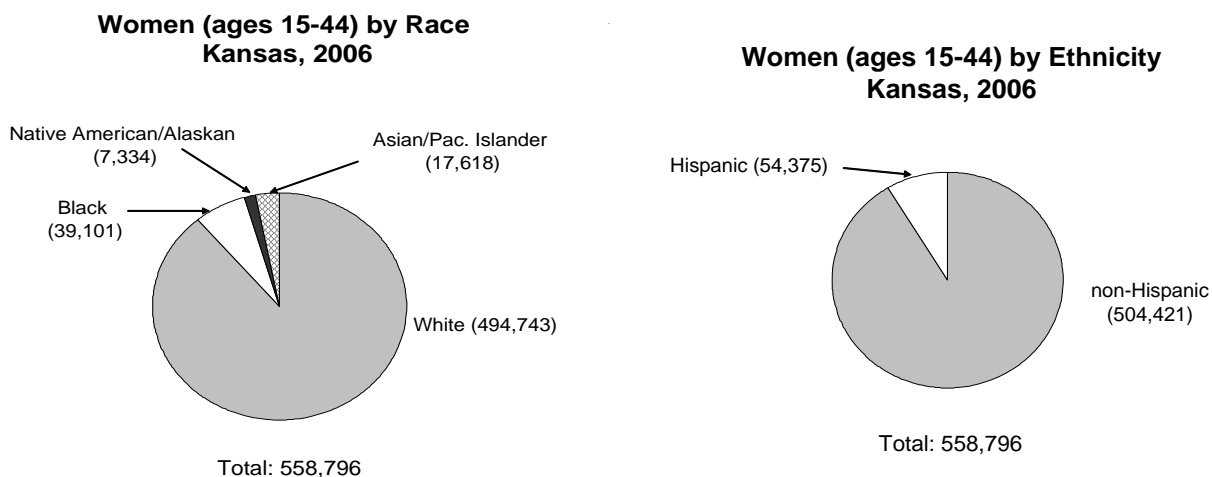
WOMEN OF REPRODUCTIVE AGE

AND

INFANTS

Demographics

In 2006, women of reproductive age 15-44 accounted for 20.2% (558,796) of the Kansas population (2,764,075). The race and ethnicity composition for this group was estimated at 88.5% White, 7.0% Black, 3.2% Asian and Pacific Islander, 1.3% Native American or Alaska Native and 9.7% Hispanic.



In 2006, a total of 40,896 births occurred to Kansas residents, 1,195 more than in 2005. This 3.0% increase is the highest since a 3.2% increase from 1997 to 1998. The number of births in 2006 is the highest reported since 1981 (41,202). The Kansas birth rate of 14.8 per 1,000 population was a 2.1% increase from the 2005 rate of 14.5 and 3.5% higher than the national rate of 14.3. Geary, Seward and Grant counties had the highest county birth rates of 26.0, 22.0, and 20.0 births per 1,000 population respectively.

In 2006, 38.3% of all Kansas live births occurred to women in the 15-24 age-group, 50.4% of live births occurred to women in the 25-34 age-group and 11.0% occurred to women in the 35-44 age-group. In 2006, 71.9% of Kansas live births were to White Non-Hispanic mothers, 6.9% were to Black Non-Hispanic mothers, 5.2% were to mothers of Other/Multiple Non-Hispanic races, and 16.1% were to Hispanic mothers. Even though Hispanic women comprise only 9.7% of women of reproductive ages, they had 16.1% of all live births.

During the period 2002 through 2006, 54.1% of births occurred in 5 urban counties with 73.9% (150) of Kansas obstetricians practicing in the same. The remaining 100 Kansas counties account for 45.9% of all births where 26.1% (53) of the state's 203 obstetricians practice. Twenty-seven (27) rural and frontier counties average fewer than 40 births per year.

Data Sources and References:

Sommer K, Stanley L. *Kansas Annual Summary of Vital Statistics, 2006*. Topeka, KS: Kansas Department of Health and Environment, 2007. www.kdheks.gov/hci/annsumm.html

Women's Health Care Coverage

KANSAS GOAL: Increase health care coverage for women of reproductive age.

Indicator: Percent of women in their reproductive years (18-44) with public or private health insurance coverage.

Definition: Women ages 18-44 sampled by the Behavioral Risk Factor Surveillance System who reported they had any kind of health care coverage, including health insurance, prepaid plans such as Health Maintenance Organizations (HMO), or government plans such as Medicaid.

Significance: Access to health care is a leading Healthy People 2010 indicator. Strong predictors of access to quality health care include having health insurance, a higher income, and a regular primary care provider or other source of ongoing health care.¹ Nationally in 2006, women (18-44) at highest risk of being uninsured had less than a high school education (44.7%), income less than \$15,000 (42.3%), of Hispanic ethnicity (40.7%), widowed (38.7%) or out of work (37.1%). Nationally in 2006, the specific age group with the greatest risk of women being without health care coverage was 18-24 (27.3%). Additionally, women who have a usual source of care (a place they usually go when they are sick) are more likely to receive preventive care. This is particularly important for women before, during and after pregnancy. In 2006 nationally, 15.8% of women reported that they did not have a usual source of care. Hispanic women were most likely to report not having a usual source of care (44.1%) followed by Black Non-Hispanic women (19.5%) and White Non-Hispanic women (13.0%).² Research has shown that having health insurance increases timely initiation of prenatal care, promotes access to C-section deliveries for high risk births and increases access to neonatal intensive care for high risk babies.³ Limitations in access to care to extend beyond basic causes, such as a shortage of health care providers or a lack of facilities. Individuals also may lack a usual source of care or may face other barriers to receiving services, such as financial barriers (having no health insurance or being underinsured), structural barriers (no facilities or health care professionals nearby), and personal barriers (sexual orientation, cultural differences, language differences, not knowing what to do, or environmental challenges for people with disabilities). Patients with disabilities may face additional barriers arising from facilities that are not physically accessible or from the attitudes of clinicians. Hispanics, young adults, and uninsured persons are least likely to have a usual source of care.

Healthy People 2010 Objective: 1.1. Increase the proportion of persons with health insurance to 100%.

Data Sources and References:

1. http://www.dupagehealth.org/iplan2010/adobe-pdf/12CHPAccesstoCare_final.pdf
2. Behavioral Risk Factor Surveillance System, Centers for Disease Control and Prevention, U.S. Department of Health & Human Services.
3. Hadley, J. *Sicker and Poorer: The consequences of being uninsured. The Kaiser Commission on Medicaid and the Uninsured* (May, 2002). www.kff.org/uninsured/20020510-index.cfm

Note: Percentages reported here are weighted percentages. See technical notes for explanation of weighting procedure.

Epidemiology and Trends

Elimination of health risks and comprehensive management of disease prior to pregnancy increases the likelihood of a pregnant woman delivering a healthy infant. Use of clinical preventive services, for women of reproductive age before, during and after pregnancy serves as an indicator of access to health care services. Access to health services including preventive, primary care and tertiary care often depends on whether a person has health insurance. According to the Kansas BRFSS, from 2002 to 2006, there is a statistically significant decreasing trend in the number of women ages 18-44 who reported having health insurance. In 2006, the percent of Kansas women ages 18-44 that reported they have health insurance is 0.8% higher than for U.S. women, that is, 80.3% for Kansas women versus 79.7% for U.S. women.

In 2006, 85.5% of women in Kansas reported having a usual source of care. Among women, non-Hispanic Whites were most likely to report a usual source of care (91.8%), followed by non-Hispanic Blacks (89.9%); Hispanic women were least likely to report a usual source of care (78.5%). Having a usual source of care varied by family income level. Women with family incomes under 100% of the FPL were more likely to report that hospital outpatient departments and emergency departments were the places they usually go when sick, and were more likely to have no usual source of care than those with higher incomes.

Women 18-44 Without Health Care Coverage Kansas, 2006	
Kansas	19.7 %
U.S.	20.3 %

Race/Ethnicity	
White, non-Hispanic	14.9 %
Black, non-Hispanic	16.5 %
Other race, non-Hispanic	28.5 %
Multi race, non-Hispanic	46.1 %
Hispanic	52.0 %

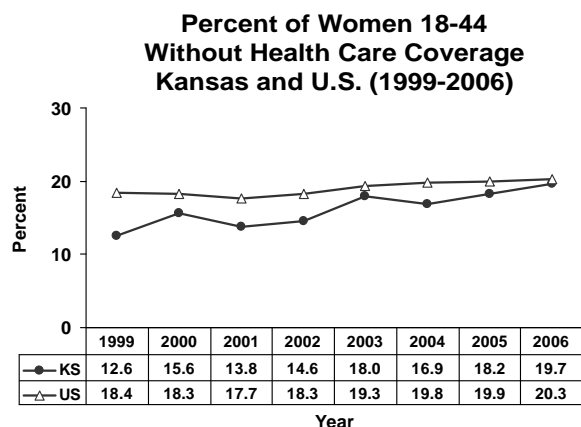
Education	
Less than high school	54.2 %
High school or GED	27.0 %
Some college	21.0 %
College	6.1 %

Annual Household Income	
Less than \$15,000	44.1 %
\$15,000 - \$24,000	45.9 %
\$25,000 - \$34,999	22.7 %
\$35,000 - \$49,999	9.7 %
\$50,000+	5.8 %

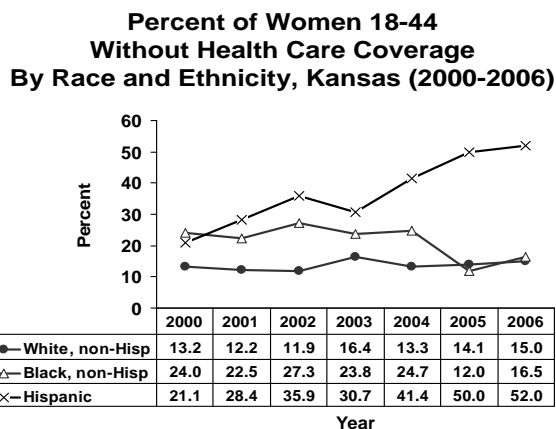
Marital Status	
Married/Unmarried couple	13.6 %
Divorced/Separated	38.9 %
Widowed	41.1 %
Never married	28.4 %

Population Density	
Frontier	12.0 %
Rural	12.9 %
Densely-settled rural	22.3 %
Semi-urban	18.6 %
Urban	20.9 %

Source: Behavioral Risk Factor Surveillance System Survey



Source: Behavioral Risk Factor Surveillance System Survey.



Source: Behavioral Risk Factor Surveillance System Survey.

Prenatal Care

KANSAS GOAL: Ensure early entry into prenatal care to enhance pregnancy outcomes.

Indicator: Percent of infants born to pregnant women receiving prenatal care beginning in the first trimester.

Definition: Comprehensive medical care provided during pregnancy, labor and delivery, and postpartum. Services include screening for medical and behavioral risk factors known to cause poor outcomes and treatment for those conditions. First trimester is the first three months of pregnancy.¹

Numerator: Number of live resident births with reported first prenatal visit during the first trimester (before 13 weeks gestation) in the calendar year reported on the birth certificate.

Denominator: Number of resident live births in Kansas in the calendar year where month prenatal care began was reported on the birth certificate.

Significance: Prenatal care is an important factor in achieving a healthy pregnancy outcome. Beginning prenatal care in the first trimester can help to reduce the incidence of perinatal illness, disability, and death by providing health care advice, and identifying and managing medical and psychosocial conditions and risk factors that can affect the health of the pregnant woman and her child.²

Healthy People 2010 Objective: 16-6a. Increase prenatal care beginning in the first trimester of pregnancy to 90% of all live births.

Data Sources and References:

1. Washington State Department of Health. *The Health of Washington State*. Maternal and Child Health: Prenatal Care, p.249.
2. U.S. Department of Health and Human Services, Health Resources and Services Administration. *Women's Health USA 2004*. Rockville, Maryland: U.S. Department of Health and Human Services, 2004.
3. Sommer K, Stanley L. *Kansas Annual Summary of Vital Statistics, 2006*. Topeka, KS: Kansas Department of Health and Environment, 2007. www.kdheks.gov/hci/annsumm.html
4. Martin JA, Hamilton BE, Sutton PD, et al. *Births: Final data for 2005*. National vital statistics reports; vol 56 no 6. Hyattsville, MD: National Center for Health Statistics. 2007.

Note:

1. Percentages were calculated only in counties with ≥ 20 live births. Percentages were not calculated in counties with a smaller number of live births as the percentages are not useful or meaningful.
2. The collection process for prenatal care (PNC) data has changed. Beginning with the reporting of 2005 data, Kansas implemented the 2003 revision of the U.S. standard birth certificate. While most data items on the certificates are comparable with past years, certain items such as prenatal care are not. For PNC, in previous years, the mother or prenatal care provider reported the month of pregnancy in which the mother began PNC. In 2005, this item was replaced by exact dates of first and last prenatal visit. States that have implemented the new standard birth certificate typically see a drop in percentage of women beginning care in the first trimester. For more information, please visit www.kdheks.gov/ches/download/Prelim_Findings_2005a.pdf.

Epidemiology and Trends

In 2006, 75% of infants were born to pregnant women receiving prenatal care in the first trimester.³ This data is not comparable to Kansas data prior to 2005 due to the revision of the Kansas Birth Certificate. (See Technical Notes.) Also, U.S. data for 2005 on this measure was 70.2%.⁴ Kansas exceeded the U.S. on this measure by 5.8% in 2005.

In 2006, a total of 40,896 live births occurred to Kansas residents. Of these live births, 37,733 had “month care began” indicated on the birth certificate. Among live births where start date for prenatal care is known, the proportion of births to mothers beginning in the first trimester was 75.0%. Kansas 2006 data shows that Hispanic and Black (non-Hispanic) mothers are most likely to enter prenatal care late. Older mothers are most likely to begin prenatal care early regardless of race or ethnicity.

In counties shaded dark gray on the map below, 90% or more of the mothers meet or exceed the Healthy People 2010 target for beginning prenatal care in the first trimester of pregnancy. Women in Smith, Rooks, Logan, Ottawa and Johnson counties were more likely to obtain early prenatal care. Women in Scott, Gove, Clark, Seward and Finney were least likely to obtain prenatal care. In general, women in rural areas are less likely to get prenatal care.

Live Births with Prenatal Care Beginning in the 1 st Trimester		
	Number	Percent
Kansas (2006)	28,286	75.0%
Kansas (2005)	27,687	76.0%
U.S. (2005)*	n.a.	70.2%

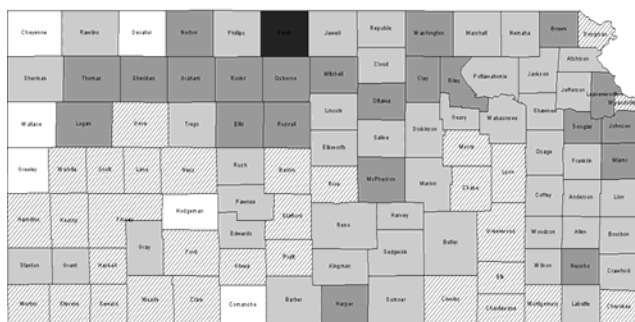
*The most recent year with finalized birth data.
Source: Center for Health and Environmental Statistics³, National Vital Statistics Reports⁴

Live Births with Prenatal Care Beginning in the 1 st Trimester Kansas, 2006		
Race/Ethnicity	Number	Percent
White, non-Hisp	21,909	80.3%
Black, non-Hisp	1,566	63.8%
Other, non-Hisp	1,456	74.3%
Hispanic	3,273	55.2%

Age groups	Number	Percent
10-14	18	34.0%
15-17	548	51.7%
18-19	1,648	61.0%
20-24	7,338	68.7%
25-29	9,040	79.2%
30-34	6,376	83.1%
35 plus	3,317	80.0%

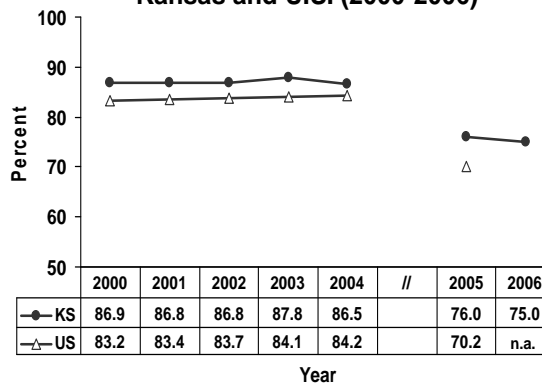
Source: Center for Health and Environmental Statistics.

Percent of Live Births with Prenatal Care Beginning in the 1st Trimester by County Kansas, 2006



Source: Center for Health and Environmental Statistics

Percent of Live Births with Prenatal Care Beginning in the 1st Trimester Kansas and U.S. (2000-2006)



Source: Center for Health and Environmental Statistics, National Vital Statistics Reports. Data prior to 2005 are not comparable due to the revision of the Kansas Birth Certificate.

Breastfeeding

KANSAS GOAL: Increase the incidence and duration of breastfeeding.

Indicators:

1. Percent of Kansas infants in which breastfeeding was initiated.
2. Percent of Kansas infants breastfed at least 6 months.

Significance: Breast milk is the optimal infant food. It has nutritional properties superior to formula and helps protect the newborn from illness. Observational studies have found that breast-fed infants have less earaches, respiratory infection, gastroenteritis, eczema¹ and a decreased risk of being overweight as a child.² Breastfeeding also strengthens the nurturing relationship between a mother and her child, promoting stronger family bonds and positive self-esteem for mothers.³ The American Academy of Pediatrics (AAP) recommends that an infant be breastfed without supplemental foods and liquids for the first 6 months after birth (known as exclusive breastfeeding).

Healthy People 2010 Objective: Increase the proportion of mothers who breastfeed their babies: in the early postpartum period to 75%, 6 months to 50%, and 1 year to 25%.

Data Sources and References:

1. U.S. Preventive Services Task Force. *Behavioral Interventions To Promote Breastfeeding: Recommendations and Rationale*. July 2003. Agency for Healthcare Research and Quality, Rockville, MD. www.ahrq.gov/clinic/3rduspstf/brstfeed/brfeedrr.htm
2. Harder, T., Bergmann, R., Kallischnigg, G., Plagemann, A. *Duration of breastfeeding and risk of overweight*. Am J Epidemiol. 2005;162:5, 397-403.
3. Brandt, K.A., Andrews, C. M., Kvale, J. *Mother-infant interaction and breastfeeding outcome*. JOGNN. 1998;27:169-174.
4. National Immunization Survey. www.cdc.gov/breastfeeding/data/NIS_data/data_2004.htm
5. Supplemental Nutrition Program for Women, Infants, and Children (WIC) program data, Kansas - 2006. This data represents Kansas families with incomes below 185% of the poverty level.
6. Pediatric Nutrition Surveillance System, U. S. Department of Health & Human Services, Centers for Disease Control and Prevention. www.cdc.gov/pednss/pednss_tables/pdf/national_table19.pdf

Epidemiology and Trends

In 2006, Kansas birth certificate data showed that in 76.2% of resident live births, the mothers initiated breastfeeding. According to the 2006 National Immunization Survey, among Kansas children born in 2004, 74.4% of Kansas mothers initiated breastfeeding, which compares to 73.8% nationally.⁴ This estimate is getting closer to the HP 2010 Target (75%). The survey also shows that low income mothers are less likely to breastfeed than their higher income counterparts.⁴

Over half of all women who have live births in Kansas participate in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program. The percent of Kansas WIC infants ever breastfed has increased by 13.8% in the last 10 years from 58.0% in 1997 to 66.0% in 2006. The percent breastfed at least 6 months remains about the same.⁵ However, the percent breastfed at least 12 months has decreased (19.7%).⁵ All are below the HP2010 objectives. Although among Kansas WIC participants Hispanic mothers met the HP2010 target for initiating breastfeeding (75.8%), more work is needed in protecting, promoting, and supporting of breastfeeding at 6 months and 12 months.^{5,6} The percent of Kansas WIC infants who initiated breastfeeding (66.0%) was higher than WIC infants nationally (60.1%).^{5,6}

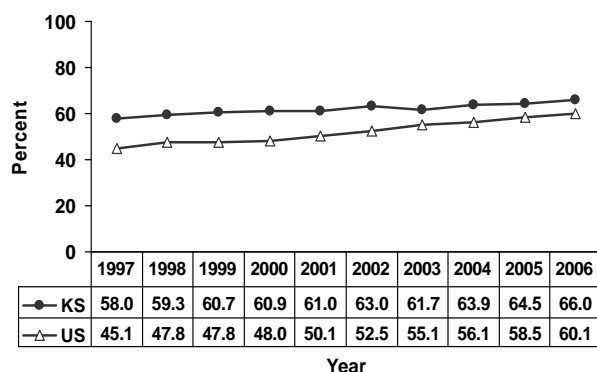
Incidence and Duration of Breastfeeding Children Born in 2004	
Ever breastfed	
Kansas	74.4%
U.S.	73.8%
Breastfed at least 6 months	
Kansas	42.2%
U.S.	41.5%
Breastfed at least 12 months	
Kansas	16.9%
U.S.	20.9%
Exclusively breastfed at least 6 months	
Kansas	9.2%
U.S.	11.3%

Maternal factors for initiating breastfeeding Children Born in 2004, U.S.	
College graduate	85.3%
No WIC and ineligible	82.1%
Asian/Pacific Islander	81.7%
Poverty level \geq 350%	81.5%
Hispanic or Latino	81.0%
Married	79.6%
Maternal age \geq 30	77.9%
MSA, Non-central city/suburban*	76.1%
Second or higher order births	74.1%

*MSA=Metropolitan Statistical Area defined by the Census Bureau

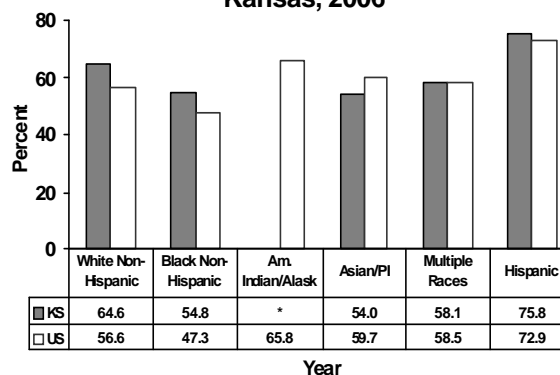
Source: National Immunization Survey, 2004 Births⁴

Percent of WIC Children Who Ever Breastfed Kansas and U.S. (1997-2006)



Source: Pediatric Nutrition Surveillance Data (WIC)^{5,6}

Infants Ever Breastfed WIC Participants by Race/Ethnicity Kansas, 2006



* Percentages are not calculated if <100 records are available for analysis after exclusions.
Source: Pediatric Nutrition Surveillance System (WIC)^{5,6}

Low Birth Weight

KANSAS GOAL: Reduce the percent of preterm births and births with low birth weight.

Indicators:

1. Percent of live birth infants weighing less than 2,500 grams.
2. Percent of live birth infants weighing less than 1,500 grams.

Definition: Low birth weight (LBW) infants are live born infants weighing less than 2,500g (5.5lb) at birth. They fall into two categories: those who are small because they are born prematurely (fewer than 37 weeks of gestation completed) and those who are small for their gestational age (intrauterine growth retardation). Very low birth weight infants (VLBW) are live born infants weighing less than 1,500g (3.3lb).

Significance: Birth weight is one of the most important factors in an infant's chance of survival. Infant mortality rates are much higher for infants born at low birth weight or very low birth weight than for heavier babies. Low birth weight babies may face serious health problems as newborns, and are at an increased risk of long-term disabilities. Only some of the reasons babies are born too small, too soon, or both are known. Fetal defects that result from genetic conditions or environmental factors may limit normal development. Multiples (twins, triplets, or higher) often are low birth weight, even at term. If the placenta is not functioning properly, a fetus may not grow as well as it should. A mother's medical problems influence birth weight, especially if she has high blood pressure, certain infections or heart, kidney or lung problems. However, the causes of preterm labor—which often results in a low birth weight baby—are poorly understood. Research suggests that the following factors may be particularly effective in preventing low weight births: smoking cessation, proper maternal nutrition, and adequate treatment of maternal medical prenatal problems.

Healthy People 2010 Objectives:

16-10a Reduce low birth weight to 5.0%

16-10b Reduce very low birth weight to 0.9%

Data Sources and References:

1. Sommer K, Stanley L. *Kansas Annual Summary of Vital Statistics, 2006*. Topeka, KS: Kansas Department of Health and Environment, 2007. www.kdheks.gov/hci/annsumm.html
2. Martin JA, Hamilton BE, Sutton PD, et al. *Births: Final Data for 2005*. National vital statistics reports; vol 56 no 6. Hyattsville, MD: National Center for Health Statistics. 2007.

Epidemiology and Trends

Low birth weight (LBW) is a Kansas MCH priority in the MCH 2010, the 5-Year State MCH Needs Assessment. In Kansas, 2006, 7.2% of 40,896 live births were LBW (one in 14 infants), while 1.3% were very low birth weight (VLBW).¹ Overall, there was an increasing trend in the last decade as seen in the United States. The number of LBW live births has increased 3.9% from 1997. In Kansas, LBW is an important issue since 61.5% of all infant deaths occurred among the 7.2% of infants born at LBW. Similarly, 45.1% of infant deaths occurred among the 1.3% of infants born at VLBW.

Recent trends in LBW are influenced by the multiple birth rate. Twins and higher order multiples are much more likely to be born LBW than singletons. In 2006, 55.6% of all plural births in Kansas were LBW.

The infant mortality rate (57.4/1,000 live births) for LBW infants with linked death and birth files was 21 times that for infants weighing 2,500 grams or more (2.8/1,000 live births). Similarly, the infant mortality rate for VLBW infants (234.4/1,000 live births) was 84 times higher than the rate for infants born weighing 2,500 grams or more.

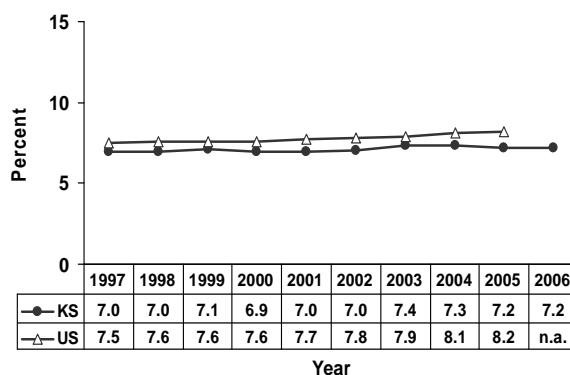
The risk of LBW was greater for smokers than for nonsmokers (11.2% vs. 6.4%), creating an excess LBW risk of 4.8% associated with smoking. Other risk factors for LBW live births include low socioeconomic status, inadequate weight gain during the pregnancy, history of infertility problems, close inter-pregnancy spacing and age of mother.

For 2005, the most recent year national data² (final) is available, the percent of Kansas births with LBW is 12.4% lower than for the U.S.

Live Births with LBW		
	# of LBW	Percent
Kansas (2006)	2,942	7.2%
Kansas (2005)	2,852	7.2%
U.S. (2005)	338,565	8.2%

Source: Center for Health and Environmental Statistics¹, National Vital Statistics Reports²

**Percent of Live Births with LBW
Kansas and U.S. (1997-2006)**

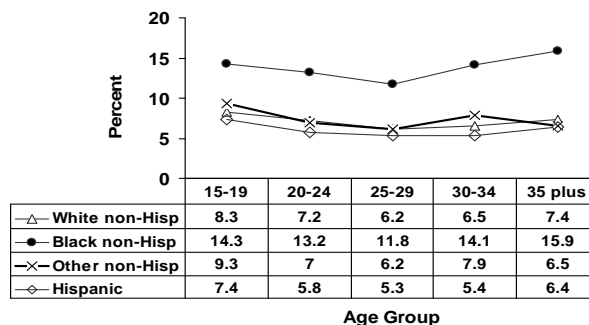


Source: Center for Health and Environmental Statistics, National Vital Statistics Reports

Live Births with LBW (2004-2006, combined)		
Race/Ethnicity	# of LBW	Percent
White, non-Hisp	5,851	6.8%
Black, non-Hisp	1,082	13.4%
Other, non-Hisp	400	7.1%
Hispanic	1,065	5.9%

Source: Center for Health and Environmental Statistics

**Percent of Live Births with LBW
by Age Group and Race
Kansas (2004-2006, combined)**



Source: Center for Health and Environmental Statistics.

Tobacco Use During Pregnancy

KANSAS GOAL: Decrease cigarette smoking among pregnant women.

Indicator: Percent of live births with reported tobacco use during pregnancy.

Definition: Live births with reported tobacco use on the birth certificate.

Significance: Cigarette smoking during pregnancy adversely affects the health of both mother and child. The risk for adverse maternal conditions (e.g., premature rupture of membranes, abruption placentae, and placenta previa) and poor pregnancy outcomes (e.g., neonatal mortality and stillbirth, preterm delivery, and sudden infant death syndrome) is increased by maternal smoking.¹ While prenatal smoking is believed to be somewhat underreported on the birth certificate, the trends in maternal smoking based on birth certificate data have been largely corroborated by data from nationally representative surveys.² Smoking during pregnancy is an important preventable risk factor for poor birth outcome. Compared with 7.7% of babies born to nonsmokers, in 2003 (U.S. data) 12.4% of babies born to smokers were LBW, that is, they weighed less than 2,500 grams.²

Healthy People 2010 Objective:

16-17c. Increase abstinence from cigarettes among pregnant women to 99%.

Data Sources and References:

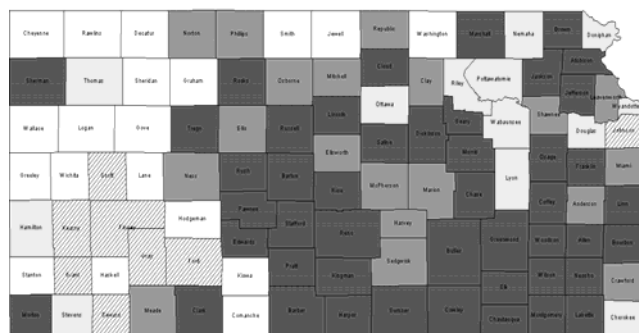
1. Centers for Disease Control and Prevention. *Smoking During Pregnancy — United States, 1990–2002*. MMWR 2004;53:911-915.
2. Martin JA, Hamilton BE, Sutton PD, et al. *Births: Final Data for 2005*. National vital statistics reports; vol 56 no 6. Hyattsville, MD: National Center for Health Statistics. 2007.
3. Sommer K, Stanley L. *Kansas Annual Summary of Vital Statistics, 2006*. Topeka, KS: Kansas Department of Health and Environment, 2007. www.kdheks.gov/hci/annsumm.html

Note: Adoption of the revised birth certificate produced substantive changes in the wording of the questions on tobacco use. The old certificate listed a tobacco use checkbox and a literal field for the number of cigarettes in the medical risk factor section. Smoking information was limited to whether the mother smoked anytime during the pregnancy. The new certificate asks about cigarette smoking in an item separate from medical risk factors. New fields address smoking behavior prepregnancy and during each trimester of the pregnancy. New data are not fully comparable with pre-2005 data. However, the new information will enable supplementary research into changes in smoking patterns before and during the pregnancy. It remains uncertain whether the changes will address what has been chronic underreporting of smoking on birth certificates. For more information, please visit www.kdheks.gov/ches/download/Prelim_Findings_2005a.pdf.

Epidemiology and Trends

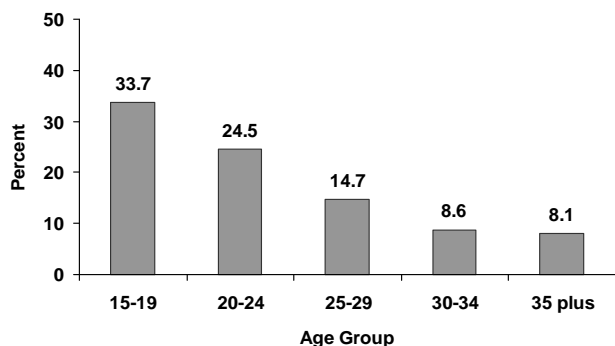
Cigarette smoking during pregnancy adversely affects the health of both mother and child. It increases the risk for adverse maternal conditions and poor pregnancy outcomes. Infants born to mothers who smoke weigh less than other infants, and low birthweight (<2,500 grams) is a key predictor for infant mortality. In 2005, the percentage of pregnant women reporting smoking during pregnancy was 16.2%. In 2006, 14.2% of women reported smoking during the last three months of pregnancy.³ It is not clear from this data whether this due to an actual reduction in smoking or just a decrease in the reporting of this behavior.

**Percent of Women Reporting Smoking During Pregnancy
Kansas, 2004 - 2005 (combined)**



Source: Center for Health and Environmental Statistics

**Percent of Women Reporting Smoking During Pregnancy by Age Group
Kansas, 2006**



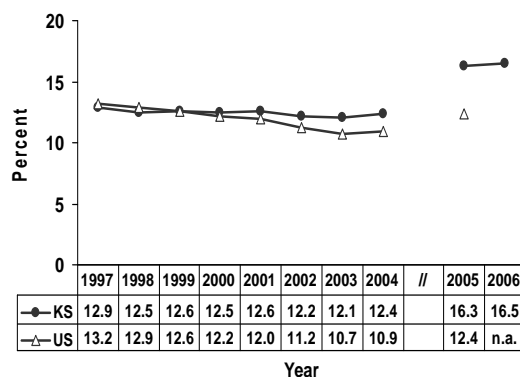
Source: Center for Health and Environmental Statistics

Women Reporting Smoking During Pregnancy

	Number	Percent
Kansas (2006)	6,729	16.5%
Kansas (2005)	6,475	16.3%
U.S. (2005)	n.a.	12.4%

Source: Center for Health and Environmental Statistics³, National Vital Statistics Reports²

**Percent of Women Reporting Smoking During Pregnancy
Kansas and US (1997-2006)**



Source: Center for Health and Environmental Statistics, National Vital Statistics Reports
Data prior to 2005 are not comparable due to the revision of the Kansas Birth Certificate.

**Women Reporting Smoking During Pregnancy
Kansas, 2006**

Race/Ethnicity	Number	Percent
White, non-Hisp	5,533	18.9%
Black, non-Hisp	513	18.4%
Other, non-Hisp	271	12.9%
Hispanic	393	6.0%

Source: Center for Health and Environmental Statistics

Infant Mortality

KANSAS GOAL: Reduce infant deaths.

Indicator: Infant mortality rate per 1,000 live births.

Definition: Infant death - The death of a live-born infant which occurs within the first year of life (from birth through 364 days). Neonatal Death - The death of a live-born infant which occurs prior to the twenty-eighth day of life. Post-neonatal death - The death of a live-born infant which occurs from 28 through 364 days of life.

Significance: Infant mortality is an important measure of a nation's health and a worldwide indicator of health status and social well-being. As of 2000, the U.S. ranked 27th among selected nations in infant mortality rates.¹ This ranking is due in large part to disparities which continue to exist among various racial and ethnic groups, particularly African Americans.² Neonatal mortality tends to be closely associated with low birth weight and with influences occurring prenatally, during birth, and in the newborn period – such as poor maternal nutrition and health habits, lack of high quality obstetric and neonatal health services, and congenital anomalies not compatible with life. Post neonatal mortality generally tends to be associated with environmental circumstances for the infant, particularly those linked to poverty.

Healthy People 2010 Objectives:

16-1c. Decrease all infant deaths (within 1 year) to 4.5 per 1,000 live births.

16-1d. Decrease neonatal deaths (within the first 28 days of life) to 2.9 per 1,000 live births.

16-1e. Decrease postneonatal deaths (between 28 days to 1 year) to 1.2 per 1,000 live births.

Data Sources and References:

1. Office of Minority Health, Centers for Disease Control and Prevention. *Eliminate Disparities in Infant Mortality* (n.d). www.cdc.gov/omhd/AMH/factsheets/infant.htm
2. March of Dimes. *PeriStats* (n.d.). www.marchofdimes.com/peristats/iim.aspx
3. Sommer K, Stanley L. *Kansas Annual Summary of Vital Statistics, 2006*. Topeka, KS: Kansas Department of Health and Environment, 2007. www.kdheks.gov/hci/annsumm.html
4. Kung H-C, Hoyert DL, Xu JQ, Murphy SL. *Deaths: Final data for 2005*. National vital statistics reports; vol 56 no 10. Hyattsville, MD: National Center for Health Statistics. 2008
5. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Child Health USA 2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2006.

Note: Due to changes in the collection of the race item on certificates, use caution when comparing 2005-2006 data to prior years. See Technical Notes.

Epidemiology and Trends

In 2006, 293 Kansas infants died before their first birthdays, representing an infant mortality rate (IMR) of 7.2 deaths per 1,000 live births.³ Kansas IMR has remained about the same over the past decade, from 7.4 per 1,000 live births in 1997 to 7.2 in 2006. This trend is consistent with the national pattern.⁴

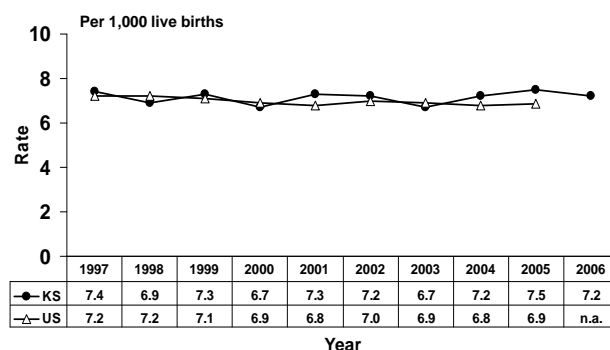
The leading causes of infant mortality in 2006 were congenital anomalies (20.8%), followed by Sudden Infant Death Syndrome (SIDS) (18.1%), disorders relating to short gestation and low birth weight (17.4%), maternal factors and complication of pregnancy, labor and delivery (8.5%), and other causes (35.2%).

In the years of 1987-2006 in Kansas, IMR decreased 21.7%, 23.5% in the White non-Hispanic population, 13.8% in the Black non-Hispanic population, 53.7% in the Hispanic population.

In 2006, 176 Kansas infants died before reaching 28 days of age, representing a neonatal mortality rate of 4.3 deaths per 1,000 live births. This rate is below that of the previous year (4.9 per 1,000 live births). Neonatal mortality is generally related to short gestation and low birth weight, congenital malformations, and conditions occurring in the perinatal period.⁵

In 2006, 117 Kansas infants died between the ages of 28 days and 1 year, representing a postneonatal mortality rate of 2.9 deaths per 1,000 live births. This rate is higher than the previous year (2.5 per 1,000 live births). Postneonatal mortality is generally related to SIDS, congenital malformations, and unintentional injuries.⁵

Infant Mortality Rates Kansas and US, 1997-2006



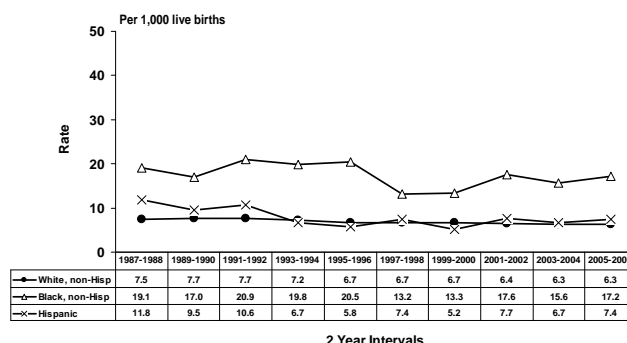
Source: Center for Health and Environmental Statistics³, National Center for Health Statistics⁴

Infant Mortality Kansas, 2006

	Deaths	Rate per 1,000 Live Births
Infant deaths	293	7.2
Neonatal deaths	176	4.3
Post-neonatal deaths	117	2.9

Source: Center for Health and Environmental Statistics

Infant Mortality Rates by Maternal Race/Ethnicity Kansas, 1987-2006



Source: Center for Health and Environmental Statistics

Infant Mortality Rate Kansas, 2006

Race/Ethnicity	Deaths	Rate per 1,000 Live Births
White, non-Hispanic	181	6.2
Black, non-Hispanic	49	17.5
Other, non-Hispanic	21	10.0
Hispanic	41	6.2

Source: Center for Health and Environmental Statistics

Congenital Anomalies (Birth Defects)

KANSAS GOALS: Reduce infant deaths related to all birth defects and congenital heart defects.

Indicators:

1. Percent of live births with birth defects.
2. Percent of women (18-44) using folic acid.
3. Percent of pregnant women abstaining from alcohol, tobacco, and other drugs.

Definitions: The word “congenital” may describe any condition present at birth, regardless of its etiology or timing of occurrence. In the broadest sense, the term “birth defect” encompasses a diversity of conditions including physical malformations, sensory deficits, chromosomal abnormalities, metabolic defects, neurodevelopmental disorders, and complications related to prematurity and low birth weight, among others.¹

Significance: Birth defects are the leading cause of infant mortality in the United States, accounting for more than 20% of all infant deaths. Of about 120,000 U.S. babies born each year with a birth defect, 8,000 die during their first year of life. In addition, birth defects are the fifth-leading cause of years of potential life lost and contribute substantially to childhood morbidity and long-term disability.² Rates of death from birth defects can be reduced either by preventing the occurrence of the defect itself or by providing the necessary care to prevent death. In the case of neural tube defects, the birth defects themselves can be prevented through folic acid dietary supplements. Deaths from birth defects that are not so easily prevented, such as heart problems, can be reduced through access to appropriate medical care.³

Healthy People 2010 Objectives: Reduce infant deaths related to all birth defects and congenital heart defects.³

Data Sources and References:

1. National Birth Defects Prevention Network (NBDPN). *Guidelines for Conducting Birth Defects Surveillance*. Sever, LE, ed. Atlanta, GA: National Birth Defects Prevention Network, Inc., June 2004.
2. Centers for Disease Control and Prevention. *Birth Defects*. www.cdc.gov/ncbddd/bd/default.htm
3. U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.
4. Center for Health and Environment Statistics, Division of Health, Kansas Department of Health and Environment. Resident live birth data - birth certificate and congenital malformation reporting form. The 2004 data are not included in this report due to incompleteness.
5. Centers for Disease Control and Prevention, Data & Statistics, Use of Supplements Containing Folic Acid Among Women of Childbearing Age - United States, 2007. www.cdc.gov/datastatistics/2008/folicAcid
6. March of Dimes. *Quick Reference: Folic Acid*. www.marchofdimes.com/professionals/690_1151.asp

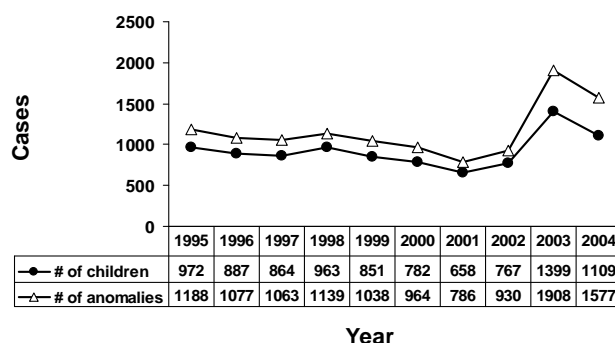
Epidemiology and Trends

Between 1995 and 2004, there were 384,652 resident live births in Kansas. Of these births, 9,252 (2.4%) were born with one or more congenital anomalies. This translates to an incidence rate of 24.1 cases per 1,000 resident live births. A total of 11,670 congenital anomalies were reported.⁴ In Kansas, heart and circulatory system anomalies are the most commonly identified and represent 23.4% of all reported major anomalies. In 2003, twice as many anomalies were reported as were reported in 2002. The difference is attributed to an educational effort starting in 2001 to report anomalies.

A recent report of data from 2007 found that among all women of childbearing age, women aged 25-34 years were the most likely to report consuming a daily supplement containing folic acid (47%), followed by women aged 35-45 years (40%) and women aged 18-24 years (30%). Women aged 18-24 years had the least awareness regarding folic acid consumption (61%), the least knowledge regarding when folic acid should be taken (6%), and the lowest reported daily use of supplements containing folic acid (30%).⁵ Folic acid is a B vitamin that can help prevent birth defects of the brain and spinal cord called neural tube defects (NTDs). Folic acid works to prevent these birth defects only if taken before conception and during early pregnancy. NTDs originate in the first month of pregnancy, before many women know they are pregnant. Therefore, it is important for a woman to have enough folic acid in her system before conception. Since about half of all pregnancies in the U.S. are unplanned, folic acid is recommended for all women of childbearing age.⁶

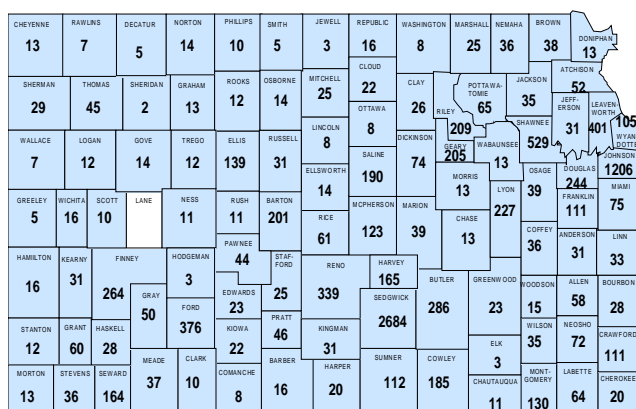
Note: 1. The 2005 and 2006 data are not reported here due to incompleteness. There was a delay in obtaining the birth defects export files due to the reengineering of the vital statistics system. 2. KSA 65-1,241 to 1,246 authorizes KDHE to establish a birth defects surveillance system. The law includes mandatory reporting of primary diagnosis of a congenital anomaly or abnormal condition under age five.

Number of Children and Number of Anomalies Reported in Kansas, 1995 - 2004



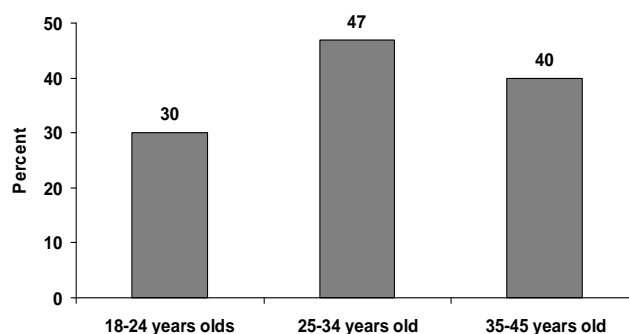
Source: Center for Health & Environment Statistics, Kansas Department of Health and Environment
Resident live birth data – Birth Certificate and Congenital Malformation Reporting Form

Number of Congenital Anomalies Reported by County Kansas, 1995-2004 (Total 11,670)



Source: Center for Health & Environment Statistics. Resident live birth data – Birth Certificate and Congenital Malformation Reporting Form
Note: The numbers above do not represent an unduplicated count of children as a child may have more than one congenital malformation.

Use of Supplements Containing Folic Acid Among Women of Childbearing Age United States, 2007



Source: Centers for Disease Control and Prevention. Use of Supplements Containing Folic Acid Among Women of Childbearing Age – United States, 2007. MMWR 2008; 57(01): 5-8.

Newborn Metabolic Screening

KANSAS GOAL: Reduce morbidity and mortality in infants with metabolic and genetic conditions.

Indicators:

1. Number and percent of newborns screened at birth for conditions mandated by the Kansas Newborn Screening program.
2. Number of newborns with appropriate and timely follow-up.
3. Number of newborns that are diagnosed that receive appropriate and timely treatment and/or service interventions.

Definition: Tests of newborns that screen for serious treatable diseases most of which are genetic. The newborn screening tests done in the United States are decided on a state-by-state basis. The most common newborn screening tests in the U.S. include those for hypothyroidism, PKU (phenylketonuria), galactosemia, and sickle cell disease.¹

Significance: Newborn metabolic screening is an essential, preventive public health program for early identification of disorders that can lead to severe health problems. State screening of newborns for specified disorders began in the 1960s and has since become widely accepted throughout the world as an important and effective public health activity. Newborn screening programs identify certain disorders which, if untreated, may result in mental retardation, other disabilities and possibly death. Early identification allows for early definitive diagnosis and treatment.

Healthy People 2010 Objectives: Related to Objectives 16.20: (Developmental) Ensure appropriate newborn bloodspot screening, follow-up testing, and referral to services. Related to Objective 16.21: (Developmental) Reduce hospitalization for life-threatening sepsis among children aged 4 years and under with sickling hemoglobinopathies (sickle cell).²

Data Source and Reference:

1. MedicineNet.com. www.medterms.com/script/main/art.asp?articlekey=4564
2. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
3. Kansas Department of Health and Environment. Kansas Newborn Screening program data, 2006.

Note: Starting July 1, 2008, Kansas newborns are screened for the core panel of 29 conditions* recommended for inclusion in all state screening programs by the American College of Medical Genetics. The state will utilize tandem mass technology (MS/MS), a major technological advance in newborn screening. For more information, please visit www.kdheks.gov/newborn_screening.

*The 29 conditions include: Hearing, 5 fatty acid disorders (CUD, LCHAD, MCAD, TFP, VLCAD), 9 organic acid disorders (GA-1, HMG, IVA, 3-MCC, Cbl-A,B, BKT, MUT, PROP, MCD), 6 amino acid disorders (ASA, CIT, HCY, MSUD, PKU, TYR-1), 2 endocrine conditions (CH, CAH), 3 hemoglobin conditions (Hb S/S, Hb S/A, Hb S/C), and 3 other conditions (BIO, GALT, CF). For more information on these conditions, please visit the National Newborn Screening and Genetics Resource Center website at <http://genes-r-us.uthscsa.edu>.

Epidemiology and Trends

Approximately 40,000 Kansas newborns are screened each year. Of those, an estimated 2,000 newborns have out of range test results indicating a need for further testing. Newborn screening (NBS) follow-up coordinators at KDHE track children with out of range results to make sure that they receive further testing and if needed treatment. Of the 2,000 babies who have an out of range screen each year, about 50 will be diagnosed with a condition. In 2006, 50 newborns confirmed with metabolic conditions received appropriate follow-up.³

In Kansas, after an infant is 24 hours old, hospital personnel collect a blood spot specimen that is sent to the KDHE State Laboratory for processing. The neonatal screening staff at the State Laboratory notifies the NBS follow-up coordinators of out of range results. The NBS follow-up coordinators serve as case managers. They notify the primary care physician of the findings by phone and mail. The primary care physician (PCP) is informed of consultation and referrals available through the Children with Special Health Care Needs program. The parents are also notified of the need to follow up with the PCP regarding out of range screening results. The NBS follow-up coordinators continue to provide case management services to assure that the infant has appropriate testing, diagnosis, referral and treatment services.

The Kansas program encompasses all components of a comprehensive state system:

- Screening - About 40,000 KS births/initial tests each year with about 2,000 needing retest,
- Follow-up - Appropriate health care providers are notified and staff track to assure retesting,
- Diagnosis - Newborns with positive screens see medical specialists for a final determination,
- Management - Families and their infants receive ongoing care through a medical team,
- Education - Information and education are available to families and to providers,
- Evaluation - Advisory council oversees program/systems to ensure effectiveness/efficiency.

Newborn Screening Indicators

Newborns Screened, Confirmed, and Diagnosed and Received Treatment and/or Intervention		
	2005	2006
# screened	40,567	41,918
% of live births screened*	100%	100%
# confirmed**	52	50
# diagnosed and received treatment and/or intervention	52	50

*Denominator - occurrence births

**Reported only those from residence births; Newborn screening program data

Source: Center for Health & Environmental Statistics; Newborn screening program data

Newborn Hearing Screening

Sound Beginnings - Kansas Early Hearing Detection and Intervention (EHDI) Program

KANSAS GOAL: Increase the proportion of newborns who are screened for hearing loss before age 1 month, have audiologic evaluation before age 3 months, and are enrolled in appropriate intervention services before age 6 months.

Indicators:

1. Percent of newborns who have been screened for hearing before hospital discharge.
2. Percent of infants screened before 1 month of age.
3. Percent of infants with audiologic evaluation completed before 3 months of age.
4. Number of infants identified with permanent congenital hearing loss (PCHL).
5. Number of infants with PCHL enrolled in early intervention services before 6 months of age.

Definition: EHDI programs are located in states and are designed to identify infants with hearing loss by universal screening. This allows identified infants to be enrolled in early intervention programs. These intervention programs help facilitate the development of visual and/or spoken language and the cognitive (thinking) skills needed to succeed academically and socially.

Significance: Every day, 33 babies (or 12,000 each year) are born in the United States with permanent hearing loss. With 3 of every 1,000 newborns having a hearing loss, it is the most frequently occurring birth defect. The American Academy of Pediatrics, the American Academy of Audiology, the Joint Committee on Infant Hearing, and the National Association of the Deaf have recommended that all babies be screened for hearing loss before they leave the hospital. Research has compared children with hearing loss who receive early intervention and amplification before 6 months of age with those who receive interventions after 6 months of age. By the time they enter first grade, children identified earlier are 1-2 years ahead of their later-identified peers in language, cognitive, and social skills.

Healthy People 2010 Objective: Increase the proportion of newborns who are screened for hearing loss by age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months.

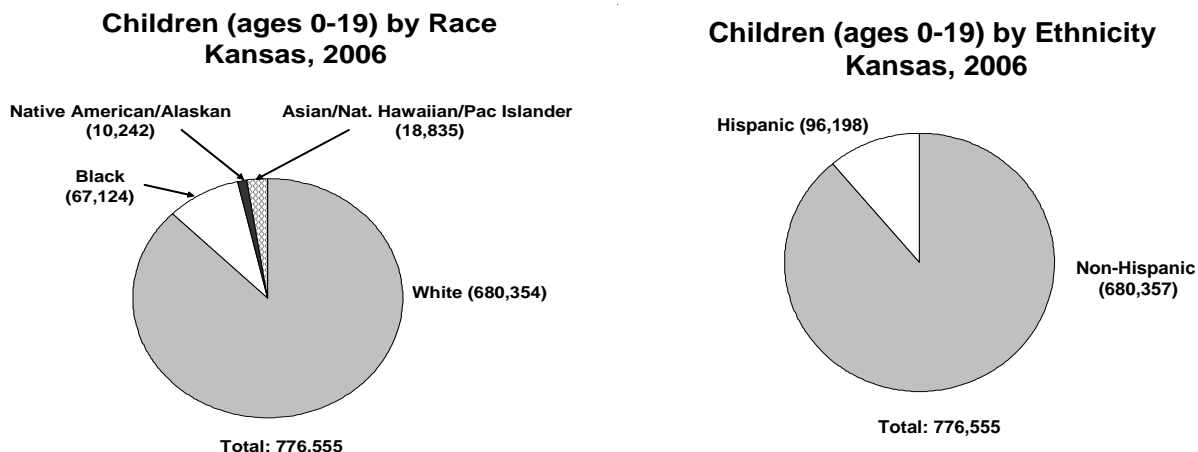
Data Source: Sound Beginnings program data, 2006. The data represents only those data reported to Sound Beginnings as of July 3, 2008.

SECTION II

CHILDREN AND ADOLESCENTS

Demographics

In 2006, for Kansas children age 0 to 19, 87.6% were White, 8.6% African American, 2.4% Asian/Native Hawaiian or Other Pacific Islander, 1.3% American Indian or Native Alaskan, and 12.4% Hispanic ethnicity.¹



According to the 2006 American Community Survey, 10% of the Kansas population five years of age and older spoke a language other than English at home. Of those speaking a language other than English at home, 64% spoke Spanish and 36 % spoke some other language; 42% reported that they did not speak English “very well.” Between 1990 and 2000 there was a 66.1% increase in the population speaking a language other than English in the home.² The Kansas percent increase was greater than the average increase for the Midwest (66.1% versus 43.4%) and slightly greater than the increase for the South (61.6%).²

Compared to the U.S. population (2006), a higher percentage of Kansas children under age 18 live in households with incomes below the federal poverty level (19.7% versus 17.4% for the U.S.). Poverty is more common in Kansas families headed by single females (47.2% versus 37.8% for the U.S.) and those with children under the age of five in the household, regardless of race or ethnicity . Most Kansas children under age 18 living in poverty live in three population centers: Sedgwick County (Wichita), Wyandotte County (Kansas City, Kansas) and Shawnee County (Topeka).

Data Sources and References:

1. Sommer K, Stanley L. *Kansas Annual Summary of Vital Statistics, 2006*. Topeka, KS: Kansas Department of Health and Environment, 2007. www.kdheks.gov/hci/annsumm.html
2. U.S. Census, Current Population Survey, Annual Social and Economic Supplements. *Kansas - Population and Housing Narrative Profile: 2006*.

Children's Health Insurance Coverage

KANSAS GOAL: Increase health insurance coverage for Kansas children.

Indicators: Percent of children ages <18 without health insurance.

Definition: Insurance against loss by illness or bodily injury. Health insurance provides coverage for medicine, visits to the doctor or emergency room, hospital stays and other medical expenses. Policies differ in what they cover, the size of the deductible and/or co-payment, limits of coverage and the options for treatment available to the policy holder.¹

Significance: Health insurance is a mechanism to provide financial access to needed health care services by distributing the costs and risks. Health insurers manage and guarantee these costs and risks of providing health care services. Health insurance is purchased by employers, directly by individuals, and through state and federal government programs such as Medicare and Medicaid. People who are not covered by health insurance must pay for all services directly out of their incomes. Lack of health insurance is a risk factor in delaying or not receiving needed care.²

Healthy People 2010 Objective: Increase the proportion of children with health insurance coverage to 100%.

Data Sources and References:

1. Investorwords.com. www.investorwords.com/2289/health_insurance.html
2. Washington State Department of Health. The Health of Washington State. A statewide assessment of health status, health risks, and health care services. July 2002. Page 357.
3. U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements. Health Insurance Historical Table: www.census.gov/hhes/hlthins/historic/index.html.

Epidemiology and Trends

Mirroring a national trend, data from the 2006 U.S. Census Current Population Survey (CPS) show the percentage of Kansas children under 18 years old without any insurance increased from 6.2 in 2005 to 7.3 in 2006.³

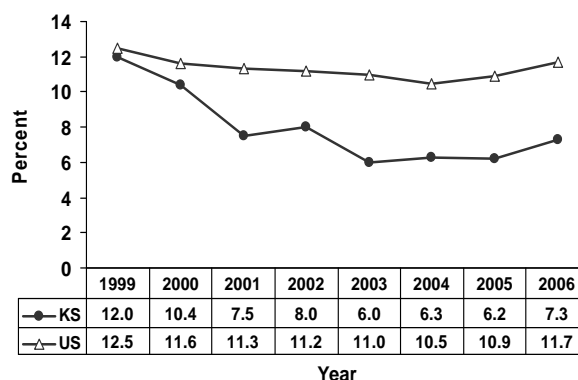
In Kansas, based on the 2-year moving average CPS estimates (2005-2006), 6.8% children were uninsured compared to 6.3% in 2004-2005. With an uninsured rate of 13.7%, children in poverty were more likely to be uninsured than children not in poverty (5.2%) or all children (6.8%). About one-third of children (30.3%) were publicly insured by sources such as Medicare, Medicaid, military health care, and the State Children's Health Insurance Program (SCHIP).

About 14.7% of Hispanic children did not have any health insurance, compared with 6.0% for non-Hispanic White children and 10.8% for non-Hispanic Black children. White non-Hispanic children had high rates of private health insurance coverage (78.6%) compared to non-Hispanic Black and Hispanic children (34.7% and 42.1%, respectively). Non-Hispanic Black and Hispanic children were the most likely to have public coverage (62.0% and 61.8%, respectively).

As family income increases, rates of private coverage increase and rates of public coverage and no coverage decrease. Children with family incomes below 100% of the poverty level were the most likely to have public coverage (70.1%) or be uninsured (13.7%). The majority (90.1%) of children with family incomes of 200% or more of the poverty level were privately insured.

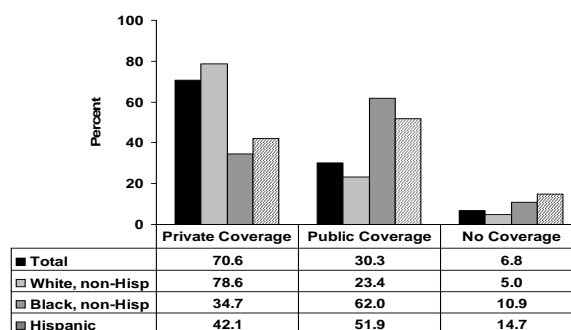
The U.S. CPS results indicate that a child's insurance status is related to a wide range of child and family characteristics. Socioeconomic characteristics and parental employment were found to have an especially strong relationship with a child's insurance status.

**Percent of Uninsured Children Under 18 years
Kansas and U.S. (1999-2006)**



Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements.
www.census.gov/hhes/www/hlthins/historic/hihist5.html

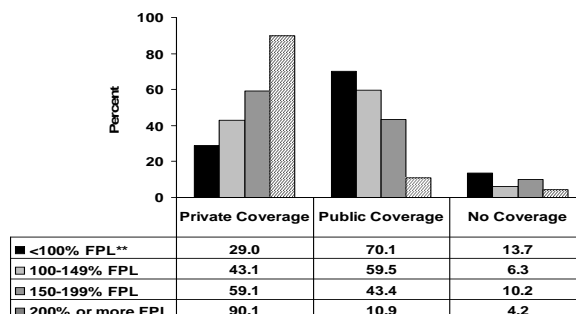
**Health Insurance Coverage Among Children Under 18 years
By Race/Ethnicity and Type of Coverage*
Kansas (2-year average 2005-2006)**



*Totals equal more than 100% because children may have more than one source of coverage.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements.
www.census.gov/hhes/www/cps/cps_table_creator.html

**Health Insurance Coverage Among Children Under 18 years
By Poverty Level and Type of Coverage*
Kansas (2-year average 2005-2006)**



*Totals equal more than 100% because children may have more than one source of coverage.
**Federal poverty level.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements.
www.census.gov/hhes/www/cps/cps_table_creator.html

Immunization

KANSAS GOAL: Increase and/or maintain vaccination coverage levels among children aged 19 to 35 months.

Indicator: Percent of 19 to 35 month olds who have received the full schedule of age appropriate immunizations* against Measles, Mumps, Rubella, Polio, Diphtheria, Tetanus, Pertussis, Haemophilus Influenza, and Hepatitis B.

Definition: Immunizations (vaccinations) work by stimulating the immune system, the natural disease-fighting system of the body. The healthy immune system is able to recognize invading bacteria and viruses and produce substances (antibodies) to destroy or disable them. Immunizations prepare the immune system to ward off a disease. To immunize against viral diseases, the virus used in the vaccine has been weakened or killed. To immunize against bacterial diseases, it is generally possible to use only a small portion of the dead bacteria to stimulate the formation of antibodies against the whole bacteria. In addition to the initial immunization process, it has been found that the effectiveness of the immunization can be improved by periodic repeat injections or “boosters.”¹

Significance: Immunization status is not a health outcome; however, it is closely linked to rates of childhood diseases and is a good short-term predictor of long-term changes in disease incidence. Hence, immunization rates for a population are a valid surrogate measure of health outcomes or disease rates. Immunization rates for two-year-old children serve as a proxy measure for the proportion of young children receiving well-child health care. High immunization rates for school-aged children reflect compliance with state laws requiring evidence of immunization at the time of first enrollment in school.² Vaccination coverage levels of 90% are, in general, sufficient to prevent circulation of viruses and bacteria-causing vaccine-preventable diseases (VPDs). Maintenance of high vaccination coverage levels in early childhood is the best way to prevent the spread of VPDs in childhood and to provide the foundation for controlling VPDs among adults.³

Healthy People 2010 Objective: Increase and/or maintain vaccination coverage levels among children aged 19 to 35 months.² Target: 90%

Data Sources and References:

1. MedicineNet.com. www.medterms.com/script/main/art.asp?articlekey=3909
2. Miller C, Fine A, Adams-Taylor S. *Monitoring Children's Health: Key Indicators*, 2nd edition. Washington, DC: American Public Health Association, 1989.
3. U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000. Page 14-37.
4. National Immunization Survey. www.cdc.gov/nip/coverage/#NIS
5. Kansas Department of Health and Environment. *Retrospective Immunization Survey*. www.kdheks.gov/immunize/retro_survey.html

Note: *The 4:3:1:3:3 combination series includes four doses of DTaP vaccine, three doses of Polio vaccine, one dose of measles-mumps-rubella vaccine, three doses of hepatitis B vaccine, and three doses of *haemophilus influenzae* type b vaccine.

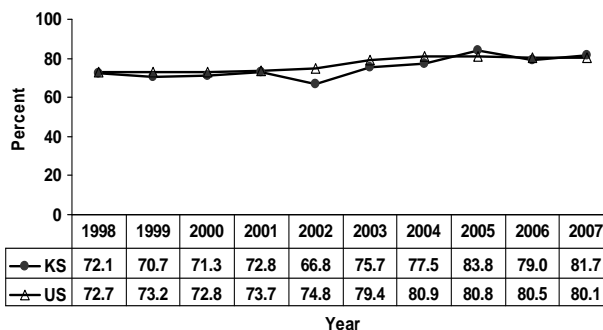
Epidemiology and Trends

According to the 2007 National Immunization Survey (NIS), Kansas immunization rates for 4:3:1:3:3 combination (DTaP4-Polio3-MMR1-Hib3-HepB3) increased from 79.0% in 2006 to 81.7% in 2007.⁴ This was above that of the national average (80.1 %), but remains well under the 90% goal set for immunization coverage by the Centers for Disease Control and Prevention (CDC) and the National Childhood Immunization Initiative. Overall, an increasing trend was observed over the last 10 year period. In Kansas, *Haemophilus Influenzae* type b (Hib) is not required for school entry. It may be under reported. For the school year 2008-2009 in Kansas, Hepatitis B (3 doses) and varicella (1 dose) will be required for all students through grade 5.

Statewide immunization coverage rates by age 24 months statistically decreased from last year (57.9%) for the 4:3:1:3:3 series in the 2006-2007 Retrospective Survey (51.1%). Possible reasons for the change in immunization rates include: change in methodology, DTaP deferral because of vaccine shortage, and the addition of private schools. The change in methodology and the DTaP deferral were the two factors that lowered the rates. The addition of private schools did not negatively affect the coverage rates. When analyzed separately, the rates at private schools were higher than in public schools.⁵

The results from the Retrospective Survey (RS) were compared with the results from the 2003 NIS, which refers to the same time period in this retrospective survey. The coverage rate for the 4:3:1:3:3 series was statistically lower in the RS (51.2% [95%CI 49.6-52.6]) when compared to the NIS result (75.7% [95%CI 69.6-81.8]) for Kansas. Possible reasons for the difference in rates are that Hib3 is not required for school entry and may not be routinely recorded on the Kansas Certificates of Immunization (KCIs), and differences in sampling methodologies. The NIS also covers children between 19-35 months of age, while the RS stops at 24 months. The extended period of time for the NIS could account for the difference in rates.⁵

**Estimated Vaccination Coverage with 4:3:1:3:3 Series
Children 19-35 Months
Kansas and U.S., 1998-2007**



Source: National Immunization Survey.

**Retrospective Immunization Coverage Survey 2002-2003 Results
(School Year 2006-2007) for 4:3:1:3:3 Series (%)
Kindergarteners vaccine receipt at the age of 2 years**

CHEYENNE	RAILINS	DECATUR	NORTON	PHILLIPS	SMITH	JEWELL	REPUBLIC	WASHINGTON	MARSHALL	NEMAHA	BROWN	DOUGLASS
82.8	64.3	36.4	66.1	72.2	46.9	28.6	61.4	71.2	71.8	67.6	62.6	59.0
SHERMAN	THOMAS	SHERIDAN	GRAHAM	ROOKS	OSBORNE	MITCHELL	CLOUD	CLAY	POTTAWA	JACKSON	ATCHISON	JEFFERSON
52.1	56.9	42.9	76.9	82.5	80.0	49.2	60.2	50.0	67.1	59.1	61.1	56.9
WALLACE	LOGAN	GOVE	TREGO	ELLIS	RUSSELL	LINCOLN	OTTAWA	DICKINSON	NEOHO	DOUGLAS	JEFFERSON	WYATT
60.9	74.1	56.5	*	68.1	60.3	11.1	55.2	60.6	52.9	63.4	56.9	35.2
GRESLEY	WICHITA	SCOTT	LANE	NESS	RUSH	SWATON	ELLSWORTH	SALINE	MORRIS	LYON	OSAGE	DOUGLAS
60.0	55.6	73.5	81.3	66.7	58.3	58.6	52.2	60.6	50.0	51.5	50.3	42.8
HAMILTON	KEARNY	FINNEY	HODGEMAN	PAWNEE	STEELE	RENO	MOOREHEAD	MARION	CHASE	COFFEY	INDIAN	LEAVENWORTH
73.7	61.2	53.7	72.7	83.1	73.3	75.0	51.0	26.8	65.9	69.7	69.9	44.2
STANTON	GRANT	HASKELL	GRAY	FORD	EDWARDS	PRATT	KIOWA	WAGONER	BUTLER	GREENWOOD	HOODSON	ALLEN
45.9	60.3	59.2	62.1	42.1	73.3	58.0	71.0	56.6	52.1	60.4	64.5	48.0
MORTON	STEVENS	SEWARD	WEAVER	CLARK	COMANCHE	BARBER	HARPER	SUMNER	COWLEY	ELK	WILSON	NEOHO
67.4	52.1	53.2	62.5	60.9	80.8	67.4	50.8	39.8	22.0	63.2	50.0	34.2
										CHAUTAUGUE	MONTGOMERY	LABETTE
										53.3	55.4	32.7
												CHEROKEE
												47.8

*No schools reported data from Trego county.

Source: Retrospective Immunization Coverage Survey.

Lead Poisoning, Pediatric

KANSAS GOALS:

1. Housing Goal: Eliminate lead hazards from where children live, play, and visit by providing a mechanism to allow the public to make lead-safe housing choices.
2. Health Goals: Increase the number of children <72 months of age that have received a blood lead test. Decrease the percentage of children tested whose blood lead levels are $\geq 10 \mu\text{g/dL}$.

Indicator: Number of pediatric lead poisonings among children 0 to 72 months of age.

Definition: An elevated blood lead level is defined as a level of lead in the blood high enough to require medical evaluation for the possibility of adverse mental, behavioral, physical, or biochemical effects. Lead plays no known useful function in body chemistry.¹

Significance: Lead poisoning is a preventable pediatric health problem affecting Kansas children. Lead levels can affect the developing nervous system of young children, resulting in delayed development, decreased IQ, learning problems, and behavior problems. High levels of lead (greater than $20 \mu\text{g/dL}$) can have adverse effects on the kidneys and blood-producing organs as well as the digestive and reproductive systems. Very high blood lead levels (greater than $70 \mu\text{g/dL}$) can cause devastating health consequences, including seizures, coma and death. The developing fetus is very susceptible to lead exposure and blood lead levels of the mother. Early identification and treatment of lead poisoning reduces the risk that children will suffer permanent damage.²

Healthy People 2010 Objective:

1. Housing Goal: Increase the proportion of persons living in pre-1950s housing that has been tested for the presence of lead-based paint. Target: 50%
2. Health Goal: Eliminate elevated blood lead levels in children. Target: 0%

Data Source and Reference:

1. Miller C, Fine A, Adams-Taylor S. *Monitoring Children's Health: Key Indicators, 2nd Edition*. Washington, DC: American Public health Association, 1989.
2. Bureau of Epidemiology and Disease Prevention, Division of Health, Kansas Department of Health and Environment. *Reportable Infectious Diseases in Kansas, 2005 Summary*. Page 71.
3. Kansas Childhood Lead Poisoning Prevention Program. *2006 Annual Report*.

Oral Health

KANSAS GOALS: Increase the oral health status of Kansas children.

Indicators:

1. Percent of children in third grade who have dental caries in their primary or permanent teeth.
2. Percent of children in third grade who have received protective sealants on at least one permanent molar.

Definition: (1) Dental caries is an infectious disease caused by mutans streptococci. These bacteria which adhere to tooth surfaces, produce acid from carbohydrates and demineralize the enamel and dentin resulting in caries. This is preventable because the combination of factors that cause it can be reduced through a variety of interventions. (2) Dental sealants are widely accepted by dental professionals as an effective decay preventive treatment. A plastic-like material is bonded to the chewing surfaces of permanent molar teeth, and the sealant works to prevent bacteria and acid by-products from creating decay in the pits and grooves of healthy teeth.¹

Significance: Oral health of children is a good indicator of their overall health. It is an essential and integral component of health throughout life.² Although dental caries (tooth decay) is largely preventable, it is the most common chronic disease of children aged 5 to 17 years. This preventable health problem begins early: 17% of children aged 2-4 years have already had decay. By the age of 8, approximately 52% of children have decay, and by the age of 17, dental decay affects 78% of children. Once established, the disease requires treatment. A cavity only grows larger and more expensive to repair. Pain and suffering due to untreated tooth decay can lead to problems in eating, speaking, and attending to learning. During the federal fiscal year 2004, fewer than 1 in 4 Medicaid-covered children received at least one preventive dental service in Kansas. Poor children have nearly 12 times more restricted-activity days because of dental-related illness than children from higher-income families.³

Healthy People 2010 Objectives: (1) Reduce the proportion of children who have dental caries experience in their primary or permanent teeth to 42%. (2) Increase the proportion of children who have received dental sealants on their molar teeth to 50%.

Data Source and Reference:

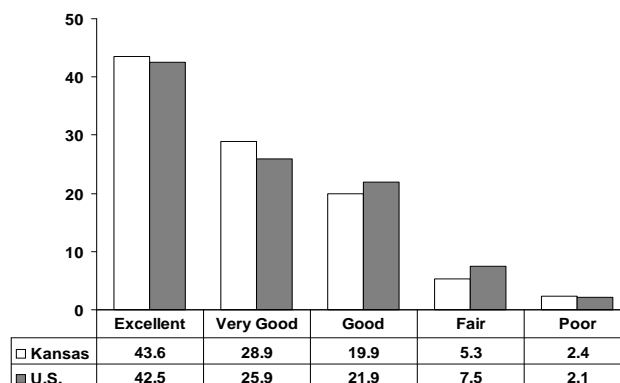
1. Office of Oral Health, Kansas Department of Health and Environment. *Smiles Across Kansas 2004: The Oral Health of Kansas Children*. www.kdhe.state.ks.us/ohi/download/smiles_across_kansas_2004.pdf
2. U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000. Page 21-1.
3. *Children's Oral Health*. www.cdc.gov/OralHealth/topics/child.htm
4. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal, and Child Health Bureau. *Child Health USA 2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2006.
5. National Survey of Children's Health, 2003.

Epidemiology and Trends

According to the 2003 National Survey of Children's Health, the parents of 72.5% of Kansas children reported that their children's teeth were in excellent or very good condition. This compares to 68.4% for the U.S. The condition of children's teeth varies by a number of factors, including race and ethnicity. In 2003, in Kansas, 76.9% of White children had teeth that were in excellent or very good condition, as reported by their parents, as did 75.8% of multiracial children. The parents of Black and Hispanic children were less likely to report that their children's teeth were in excellent or very good condition (66.0% and 43.1% respectively). Parents who reported that their child's teeth were in fair or poor condition were asked to identify the specific dental health issues experienced by their child. Forty-eight percent of Kansas children whose teeth were in fair or poor condition were reported to have cavities, compared to 54.6% for the U.S. Other commonly reported problems included teeth problems such as grinding, soft teeth, or teeth falling out (3.8% vs. 6.1% for the U.S.); broken front tooth or teeth that need repair (6.7% vs. 11.8% for the U.S.); pain (9.2% vs. 4.6% for the U.S.); and crooked teeth, or teeth that need braces (35.0% vs. 33.5% for the U.S.).^{4,5}

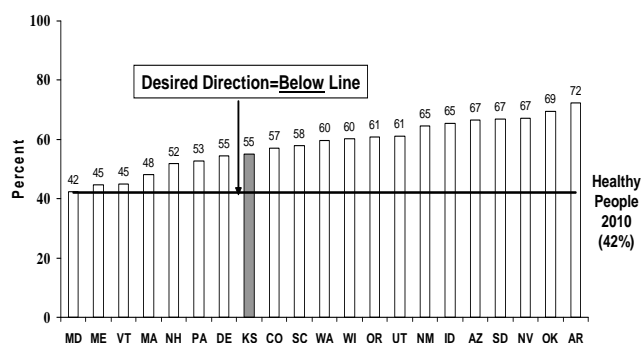
The baseline data was obtained in a 2004 open mouth survey, Smiles Across Kansas. The results from the 2007 survey indicated that the oral health status of third grade children in Kansas varied substantially based on whether the child's family reports having dental insurance and access to dental care services. When insurance coverage is high, most oral health indicators measured are positive; when insurance coverage is reported to be low or absent, children share a pattern of poor(er) access, worse health, and the absence of some preventive treatments that would slow the progression of oral disease (i.e., dental sealants). As seen in the national survey, certain groups of children were found to be more vulnerable to relatively poorer oral health or to lack evidence of preventive services than others. Black children were not observed to have dental sealants at the level expected, and Hispanic children demonstrated a similar pattern. Both reports can be found at www.kdheks.gov/ohi.

**Conditions of Children's Teeth (Ages 1-17): 2003
Kansas and U.S.**



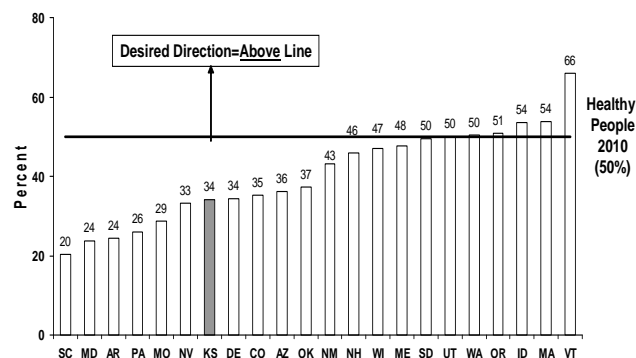
Source: National Survey of Children's Health, 2003.^{4,5}

**Percent of 3rd Grade Children with
Experienced Dental Decay
NOHSS States**



Source: National Oral Health Surveillance System (www.cdc.gov/nohss)

**Percent of 3rd Grade Children with Dental Sealants
NOHSS States**



Source: National Oral Health Surveillance System (www.cdc.gov/nohss)

Injury

KANSAS GOAL: Reduce the number of deaths to children and adolescents caused by injuries.

Indicator: Rate (per 100,000) of injury deaths among children and adolescents.

Definition: Injury deaths include both unintentional and intentional, excluding adverse events due to medical care (children: ages 1-14, adolescents/young adults: ages 15-24).

Significance: Injuries, particularly unintentional injuries are the leading cause of death for children and adolescents/young adults both in Kansas and in the U.S. The risk of injury is so great that most persons are seriously injured at some time during their lives. Nevertheless, this widespread human problem is often taken for granted, in the belief that injuries happen by chance and are the result of unpredictable “accidents.” In fact, many injuries are not “accidents”, or random, uncontrollable events. Rather, most injuries are predictable and preventable.

Healthy People 2010 Objectives: 15-13. Reduce deaths caused by unintentional injuries to 17.5 deaths per 100,000 (all ages).

Data Source and Reference:

1. Sommer K, Stanley L. *Kansas Annual Summary of Vital Statistics, 2006*. Topeka, KS: Kansas Department of Health and Environment, 2007. www.kdheks.gov/hci/annsumm.html
2. Web-based Injury Statistics Query and Reporting System (WISQARS). www.cdc.gov/ncipc/wisqars/

Epidemiology and Trends

In 2006, injuries caused the deaths of 55 children aged 1 to 14 years and 247 adolescents and young adults aged 15 to 24 years in Kansas. In 2005 (the most recent year final death data is available), the Kansas injury death rate was higher than the U.S. rate for children ages 1-14 (11.0 vs. 9.2) and lower for adolescents and young adults 15-24 (56.5 vs. 61.7).^{1,2}

In Kansas, 2005 through 2006, the injury death rates for both ages 1-14 and ages 15-24 were highest among Black non-Hispanic children (18.6 and 93.9 respectively). Motor vehicle crashes (45.9%, 45 deaths), drowning (13.3%, 13), and fires and burns (11.2%, 11) were the most common causes of unintentional injury death among children aged 1 to 14 years. Motor vehicle crashes (75.5%, 240 deaths) were the most common cause of unintentional injury death among adolescents and young adults aged 15 to 24 years, followed by poisonings (8.8%, 28), and drowning (3.1%, 10). For White (non-Hispanic and Hispanic) adolescents and young adults, unintentional injury resulted in the highest percent of injury deaths. However, for Black (non-Hispanic) adolescents and young adults, homicides resulted in more deaths than unintentional injuries.

Injury Mortality

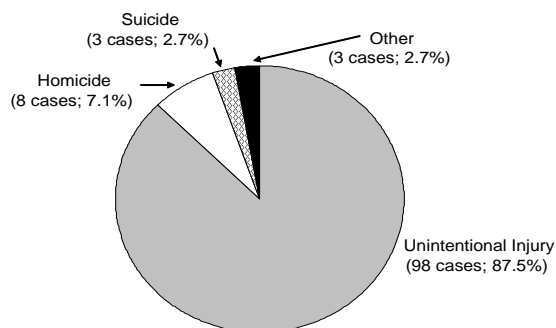
	Ages 1-14		Ages 15-24	
	Deaths	Rate*	Deaths	Rate*
Kansas (2006)	55	10.3	247	59.6
Kansas (2005)	57	11.0	235	56.5
U.S. (2005)	5,201	9.2	26,001	61.7

Race/Ethnicity (2005-2006)	Ages 1-14		Ages 15-24	
	Deaths	Rate*	Deaths	Rate*
White, non-Hispanic	71	9.0	346	52.6
Black, non-Hispanic	16	18.6	58	93.9
Hispanic	19	13.9	54	66.0

*Rate: Deaths per 100,000 population

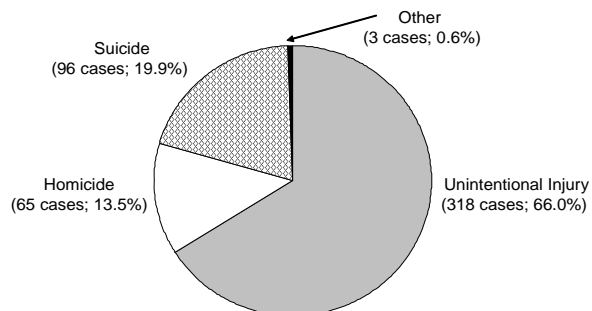
Source: Center for Health and Environmental Statistics

Injury Deaths by Intent (Ages 1-14) Kansas, 2005-2006



Source: Center for Health and Environmental Statistics.

Injury Deaths by Intent (Ages 15-24) Kansas, 2005-2006



Source: Center for Health and Environmental Statistics.

Overweight

KANSAS GOAL: Decrease the prevalence of overweight in Kansas children and adolescents.

Indicator: Percent of overweight children and adolescents.

Definition: BMI is a common measure expressing the relationship (or ratio) of weight-to-height. It is a mathematical formula in which a person's body weight in kilograms is divided by the square of his or her height in meters (i.e., $\text{wt}/(\text{ht})^2$). The BMI is more highly correlated with body fat than any other indicator of height and weight. Adults with a BMI of 25 to 29.9 are considered overweight, while individuals with a BMI of 30 or more are considered obese.¹ In children and teens, body mass index is used to assess underweight, overweight, and risk for overweight. Children's body fatness changes over the years as they grow. Also, girls and boys differ in their body fatness as they mature. This is why BMI for children, also referred to as BMI-for-age, is gender and age specific. BMI-for-age is plotted on gender specific growth charts. These charts are used for children and teens 2 - 20 years of age. For the 2000 CDC Growth Charts and additional information, please visit CDC's National Center for Health Statistics (www.cdc.gov/GROWTHCHARTS). Healthcare professionals use the following established percentile cutoff points to identify underweight and overweight in children (www.cdc.gov/nccdphp/dnpa/healthyweight/assessing/bmi/childrens_BMI/about_childrens_BMI.htm).

Underweight	BMI-for-age < 5 th percentile
Healthy weight	BMI-for-age 5 th percentile to < 85 th percentile
*At risk of overweight	BMI-for-age 85 th percentile to < 95 th percentile
*Overweight	BMI-for-age \geq 95 th percentile

*The terminology "At risk of overweight" and "Overweight" has been changed to "Overweight" and "Obese," respectively in 2007.

Significance: Overweight is the most common health problem facing US children.¹ The prevalence of obesity has increased dramatically in recent years in children of all ages. Obese children are at risk for becoming obese adults, and many known conditions observed in obese adults are now observed more frequently in youths. Type 2 diabetes represents a dramatic example.² Research has shown that overweight in children starts in the preschool years and over half of parents of overweight children are overweight themselves.²

Healthy People 2010 Objective: 19-3. Reduce the proportion of children and adolescents who are overweight or obese to 5%.

Data Sources and References:

- Centers for Disease Control and Prevention. *BMI-Bodymass index: BMI for children and teens*. www.cdc.gov/nccdphp/dnpa/obesity/defining.htm
- Quattrin, EL, Shaw, N, Shine, B, Chiang, E. *Obese children who are referred to the pediatric endocrinologist: characteristics and outcome*. *Pediatrics*. 2005;115(2)348-347.
- CAHMI/Data Resource Center analysis of the 2003 National Survey of Children's Health.
- Pediatric Nutrition Surveillance System, Centers for Disease Control and Prevention, U. S. Department of Health & Human Services.
- 2005-2006 supplemental questions on Youth Tobacco Survey, a population-based KS statewide survey.

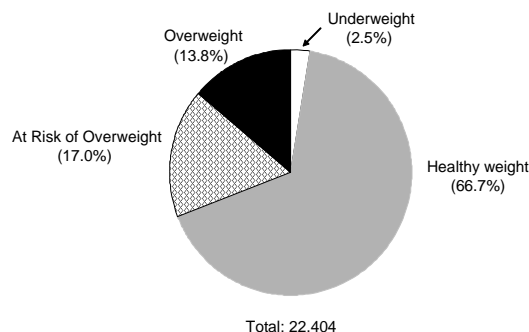
Epidemiology and Trends

In the 2003 National Survey of Children's Health, approximately 94,000 of 313,000 Kansas children ages 10-17 years (30.0%) are considered overweight or obese according to BMI-for-age standards. The prevalence of overweight and obesity in Kansas among children in poor families is more than double the rate for children in higher-income families (45.1% to 20.6%). The overweight/obese prevalence for Hispanic children in Kansas is roughly one third higher than the prevalence among non-Hispanic children. The state's Hispanic origin disparity ratio of 1.29 is sixth best in the country. Kansas children are more likely than their counterparts nationwide to be physically active for at least 4 days per week, and less likely to spend 2 hours or more in front of a television or computer screen on an average school day.³

According to the 2006 Pediatric Nutrition Surveillance System (PedNSS), which assesses weight status of children from low-income families (below 185% of poverty level) participating in WIC, 30.8% of low-income children ages 24 - 59 months in Kansas are at risk of overweight or overweight. This percent is not significantly different from the percent nationally (31.2%). The percentage of WIC participants at risk of overweight or overweight increased 1.6% from 2005. However, the change was not statistically significant. In the last 5 years with available data (2002-2006), there is a statistically significant increasing trend in the percent of WIC participants at risk of overweight or overweight.⁴

Based on the Youth Tobacco Survey, during the 2005-2006 school year, 10.8% of adolescents in grades 6-12 were overweight, and 15.2% were at risk of overweight. The prevalence of overweight was almost twice higher among boys (14.1%) compared to girls (7.6%). A significantly higher proportion of students who participated in the survey of "Other" races were overweight as compared to students who were White.⁵

Percent Weight Distribution of WIC Children (24-59 months) Kansas, 2006

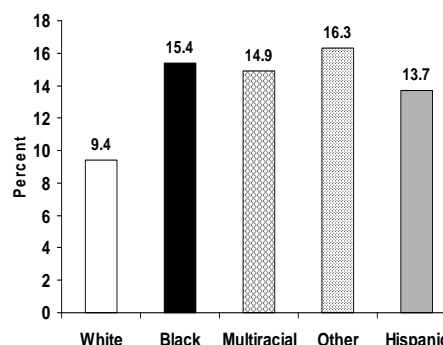


Source: Pediatric Nutrition Surveillance System.

WIC Children (24-59 months) Kansas, 2006				
Race/Ethnicity	At Risk of Overweight		Overweight	
	#	%	#	%
White, non-Hisp	1,877	16.3	1,359	11.8
Black, non-Hisp	332	15.4	250	11.6
Nat Am/Alaskan	48	22.0	38	17.4
Asian/PI	64	18.9	33	9.7
Hispanic	1,390	18.1	1,336	17.4

Source: Pediatric Nutrition Surveillance System.

***Percent of Adolescents Who are Overweight (Grades 6-12) Kansas, 2005-2006 school year**



*Note: Unweighted; cannot be generalized to all youth in Kansas.

Source: Youth Tobacco Survey, Kansas Department of Health and Environment.

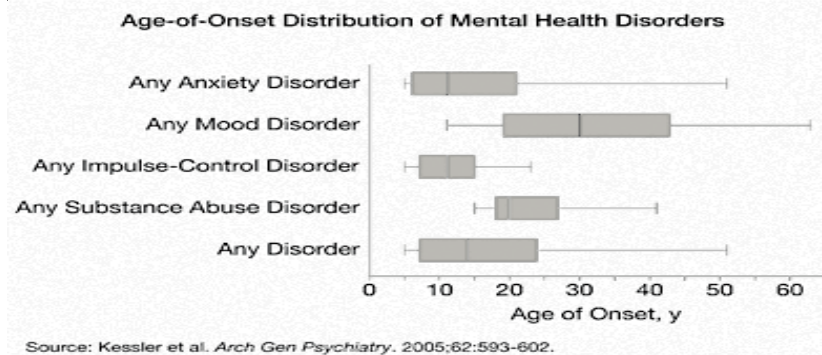
Behavioral/Mental Health

KANSAS GOAL: Improve the behavioral/mental health status of children and adolescents through early screening and referral.

Indicator: Percent of children and adolescents that receive behavioral/mental health services.

Definition: Mental health is how a child/adolescent thinks, feels, and acts when faced with life's situations.

Significance: For consumers of all ages, early detection, assessment, and linkage with treatment and supports can prevent mental health problems from compounding and poor life outcomes from accumulating. Early intervention can have a significant impact on the lives of children and adolescents who experience mental health problems. Emerging research indicates that intervening early can interrupt the negative course of some mental illnesses and may, in some cases, lessen long-term disability.¹ Early childhood is a critical period for the onset of emotional and behavioral impairments. Each year, young children are expelled from preschools and childcare facilities for severely disruptive behaviors and emotional disorders. Since children develop rapidly, delivering mental health services and supports early and swiftly is necessary to avoid permanent consequences and to ensure that children are ready for school.¹ A new survey of mental illness in the United States indicates that mental illnesses tend to strike early in life and delays in treatment leave affected individuals vulnerable to debilitating symptoms during their most productive years.² Half of all individuals who have a mental illness during their lifetimes report that the onset of disease occurred by age 14 years and three fourths by age 24 years, according to the National Institute of Mental Health (NIMH) National Comorbidity.²



Healthy People 2010 Objectives: (1) 18-6. (Developmental) Increase the number of persons seen in primary care who receive mental health screening and assessment. (2) 18-7. (Developmental) Increase the proportion of children with mental health problems who receive treatment.

Data Sources and References:

1. Shonkoff, JP, Phillips, DA. *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Washington, DC: National Academies Press; 2000.
2. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. *Related Articles, Links Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication*. *Arch Gen Psychiatry*. June 2005;62(6):593-602.
3. Kan Be Healthy Participation Report, Kansas Medical Assistance Programs Reporting Systems, Kansas Department of Social and Rehabilitation Services.
4. AIMS database, Mental Health Consortium, Kansas Community Mental Health Centers, Kansas.

Epidemiology and Trends

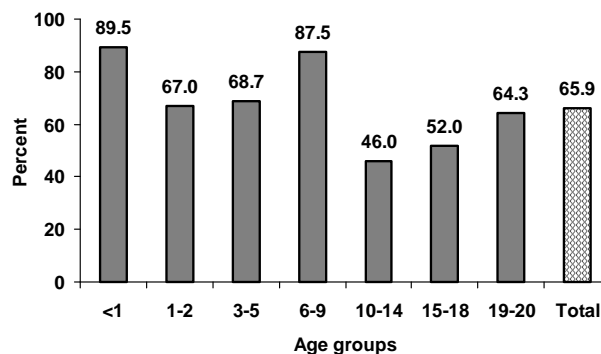
The 1999 Surgeon General's Report on mental health estimates that about 20% of children have mental disorders with at least a functional impairment. Additionally, about 11% of these children are diagnosed, but not treated.

Early and Periodic Screening, Diagnosis and Treatment (EPSDT) is a required service under the Medicaid Kan Be Healthy (KBH) program for categorically needy individuals under age 21.³ One component of EPSDT is developmental/mental health screening. The services can be provided within state and local health departments, school health programs, Head Start programs, community health centers and private practitioners. At the present time, developmental/mental health screening and referrals data are not captured separately from general exams.

In 2006, 46,970 Kansas children and adolescents ages 0 to 21 years were identified as Seriously Emotionally Disturbed (SED) and received services from Community Mental Health Centers (CMHC).⁴ This is approximately 5% of all Kansas children/adolescents ages 0 to 21.

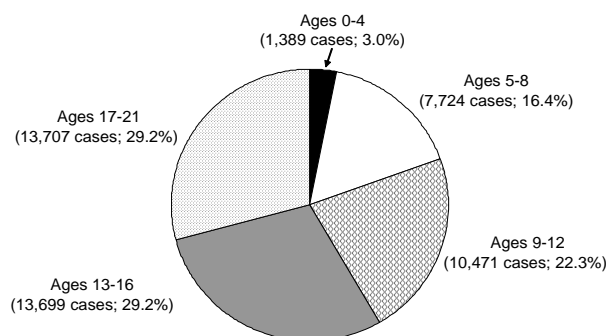
Kansas now has trend data from the Youth Risk Behavior Survey (YRBS). School failure, substance abuse, violence, and suicide are potential outcomes of mental and behavioral disorders and serious emotional disturbances (SEDs). Kansas YRBS data identified 21.0% in 2005 compared to 20.6% in 2007 students smoked cigarettes during the past 30 days; 43.9% drank alcohol during the past 30 days in 2005 compared to 42.4% in 2007; 15.6% used marijuana during the past 30 days in 2005 compared to 15.3% in 2007; 8.6% used ecstasy one or more times during their life in 2005 compared to 6.0% in 2007; 21.4% of students who felt so sad or hopeless almost every day for 2 or more weeks in a row that they stopped doing some usual activities during the 12 months in 2005 compared to 25.0% in 2007; and 6.5% attempted suicide during the past 12 months in 2005 compared to 6.7% in 2007.

**KBH Eligibles Receiving
at Least One Initial or Periodic Screen
Kansas, FFY 2007**



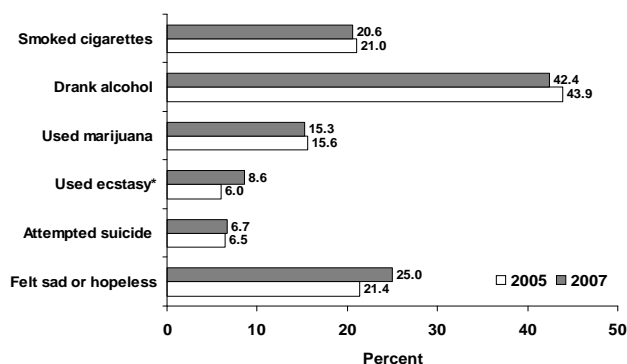
Source: Kan Be Healthy (KBH) Annual Participation Report.

**Children/Adolescents Receiving
Community Based CMHC Services By Age Group
Kansas, 2006**



Source: AIMS database, Mental Health Consortium, Kansas Community Mental Health Centers (CMHC).

**Kansas Youth Risk Behavior Survey
2005 and 2007**



*Change over time is statistically significant for $p < 0.05$.

Source: Kansas Youth Risk Behavior Survey.

Teen Pregnancy

KANSAS GOAL: Reduce teenage pregnancy and resulting health, educational, economic and social consequences for mother and child.

Indicator: Pregnancy rate per 1,000 population for teenagers aged 15-17 years.

Definition: Teenage pregnancies include live births, fetal deaths, and abortions.

Significance: Although the rate of teen pregnancy in the United States dropped by more than 25% during the 1990s, more than 800,000 U.S. teens still become pregnant each year, and eight in 10 of these pregnancies are unintended.¹ Close to half of unintended pregnancies (45 percent) end in abortion.² Pregnancy Risk Assessment Monitoring System (PRAMS) data (1999) show that 66-84% of pregnancies in women less than 20 years of age where there is a live birth are unintended. Women whose pregnancies are unintended are less likely to adopt healthy behaviors and to start prenatal care early in the pregnancy.³ Infant mortality rates are highest among teenage mothers and mothers aged 40 years and over.⁴ Teenagers are at a higher risk of delivering a low birth weight live birth. Studies suggest that the higher mortality risk for infants of younger mothers may be related to socioeconomic factors as well as biologic immaturity. Also young maternal age may be a marker for poverty.³

Healthy People 2010 Objective: 9-7 Reduce pregnancies among adolescent females aged 15-17 to 43 pregnancies per 1,000.

Data Sources and References:

1. Guttmacher Institute. *National Day to Prevent Teen Pregnancy* (May 3, 2006). www.guttmacher.org/media/inthenews/2006/05/03/index.html
2. Henshaw, SK. *Unintended pregnancy in the United States*. Family Planning Perspective. 1998;30(1): Table 1.
3. O'Brien J, Benzyl B, Gilbert BC, et al. *PRAMS and Unintended Pregnancy* (n.d.). www.cdc.gov/PRAMS/UP.htm
4. Mathews TJ, MacDorman MF. *Infant mortality statistics from the 2005 period linked birth/infant death data set*. National vital statistics reports; vol 57 no 2. Hyattsville, Maryland: National Center for Health Statistics. 2008.
5. Ventura SJ, Abma JC, Mosher WD, Henshaw SK. *Estimated pregnancy rates by outcome for the United States, 1990–2004*. National vital statistics reports; vol 56 no 15. Hyattsville, Maryland: National Center for Health Statistics. 2008. www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_15.pdf
6. Sommer K, Stanley L. *Kansas Annual Summary of Vital Statistics, 2006*. Topeka, KS: Kansas Department of Health and Environment, 2007. www.kdheks.gov/hci/annsumm.html
7. Sommer K. *Adolescent and Teenage Pregnancy Report Kansas, 2006*. Topeka, KS: Kansas Department of Health and Environment, 2007. www.kdheks.gov/hci/teenpreg.html

Epidemiology and Trends

In 2004 (the most recent year national data for this age group is available)⁵, the pregnancy rate for Kansas young teenagers 15-17 years (25.8 per 1,000) was 38.6% lower than the national rate (42.0 per 1,000).

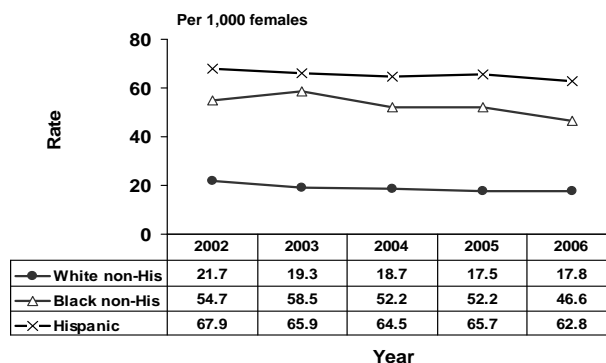
In 2006, young teenagers 15-17 years accounted for 3.2% (1,507) of the pregnancies (46,974) in Kansas. About 76.4% of the pregnancies in this age group resulted in a live birth (1,152), 23.1% in abortion (348), and the rest in stillbirths (7). The pregnancy rate for this age group was 25.5 per 1,000.^{6,7}

In Kansas, 2006, the teen birth rate (ages 15-17) was 19.5 per 1,000 females. This was 1.8% lower than 2005 (19.6 per 1,000). For the years 2002-2006, there is a statistically significant ($p=0.04$) decreasing trend in teen births for this age group. In 2005, the birth rate (19.6 per 1,000) for Kansas teens (ages 15-17) was 8.3% lower than the national rate (21.4 per 1,000). Hispanic teens in Kansas had the highest rate at 56.5 per 1,000, but this is a 3.4% decrease from 2005 (58.2 per 1,000). According to the National Campaign to Prevent Teen Pregnancy, among all states, in 2005 Kansas ranked 29th (50=highest) in teen pregnancy.

From 2002 to 2006, teenage pregnancy rates for ages 15-17 decreased for all racial and ethnic groups; 17.7% for White non-Hispanic teens, 14.7% Black non-Hispanic teens and 7.5% Hispanic teens. The Hispanic teen pregnancy rate exceeded the Black teen pregnancy rate. The Black teen pregnancy rate has continued to decline at a faster rate than that for Hispanic teens during this period.

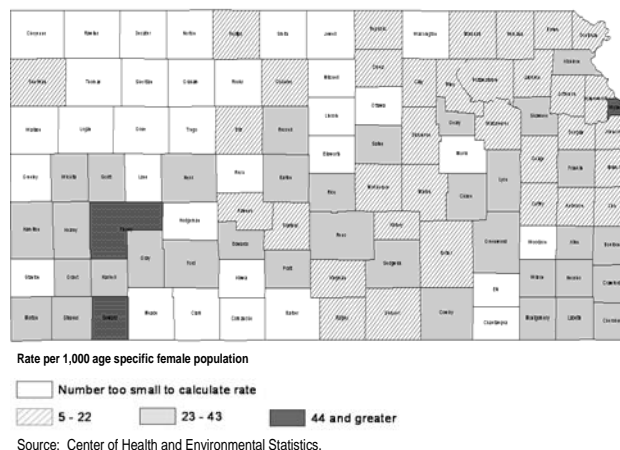
The Kansas counties with the lowest rates and at least 10 pregnant teens were Nemaha, Marshall and Marion. The counties with the highest rates, greater than the HP2010 target of 43 pregnancies per 1,000 females were Finney, Wyandotte and Seward.

**Teen Pregnancy Rate (ages 15-17)
by Race and Ethnicity
Kansas (2002-2006)**



Source: Center of Health and Environmental Statistics.

**Teen Pregnancy Rate (ages 15-17)
Kansas (2002-2006)**



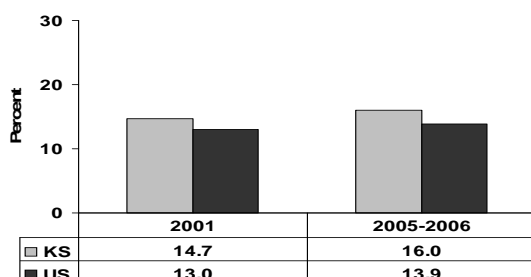
SECTION III

**CHILDREN WITH SPECIAL HEALTH CARE
NEEDS**

Demographics

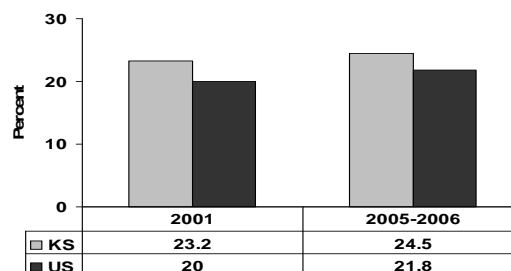
Children with Special Health Care Needs (CSHCN) are defined as those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that generally required by children. According to the 2005-2006 National CSHCN Survey (NS-CSHCN), 16.0% of Kansas children aged 0 to 17 (est. 108,024 children) had special health needs, which was slightly higher than 13.9% for the U.S. Twenty five percent of Kansas households with children include at least one child with a special health care need, compared to 21.8% for the U.S. These rates represent a modest increase from the percentage reported in 2001 for Kansas and the U.S. The reasons for this increase are not fully understood. While it is possible that the number of CSHCN is actually increasing, it is also possible that children's conditions are more likely to be diagnosed, due to increased access to medical care or growing awareness of these conditions on the part of parents and physicians.

**Prevalence of CSHCN: Persons
Kansas and the U.S.**



Source: National CSHCN Survey, 2001 and 2005-2006 (Age 0-17 yrs.)

**Prevalence of CSHCN: Households*
Kansas and the U.S.**

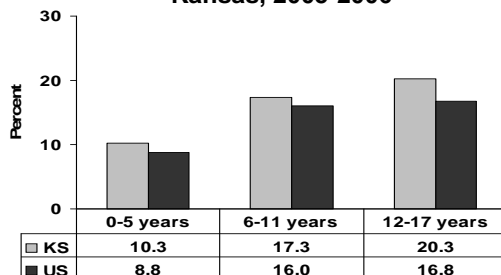


*Includes only households with children.

Source: National CSHCN Survey, 2001 and 2005-2006 (Age 0-17 yrs.)

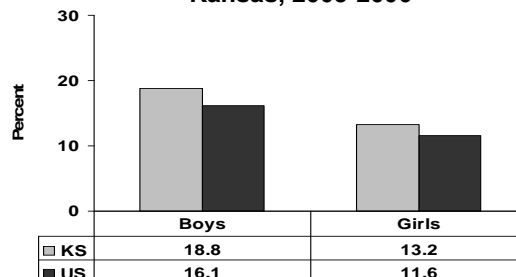
Considering the demographics of CSHCN, older children in Kansas and the U.S. were twice as likely as younger children to have a special need. In Kansas, among preschool children (ages 0 through 5), 10.3% have special health care needs. The rate is 17.3% among children ages 6 through 11. Among adolescents (ages 12 through 17), 20.3% have special health care needs. The higher prevalence of special health care needs among older children is likely to be attributable to conditions that are not diagnosed or that do not develop until later in childhood. Special health care needs are more prevalent in boys than girls in Kansas and in the U.S. Among Kansas boys, 18.8% have special health care needs, compared to 13.2% of girls. A higher proportion of boys are diagnosed with behavioral disorders.

**Prevalence of CSHCN: Age
Kansas, 2005-2006**



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

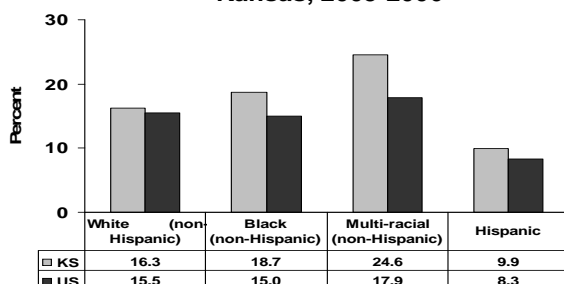
**Prevalence of CSHCN: Gender
Kansas, 2005-2006**



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

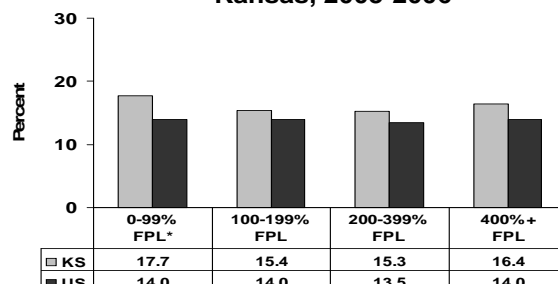
The prevalence of special health care needs varies by the child's race and ethnicity. Kansas Hispanic children (9.9%) were least likely to have a special need compared to White non-Hispanic children (16.3%) and Black non-Hispanic children (18.7%). The prevalence of special health care needs varies among income groups in Kansas compared to the U.S. where the prevalence of special health care needs does not vary substantially among income groups. CSHCN prevalence among families with incomes below 100% of the federal poverty level is higher in Kansas (17.7%) than it is for the U.S. (14.0%). CSHCN prevalence among high income families (400+% the federal poverty level) in Kansas is roughly the same as for the U.S. (*Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.)

**Prevalence of CSHCN: Race/Ethnicity
Kansas, 2005-2006**



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

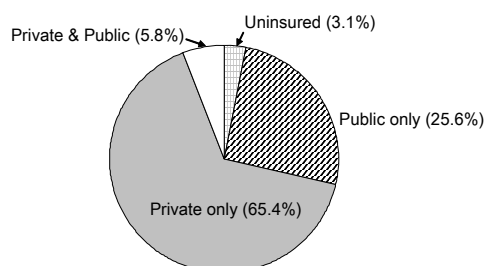
**Prevalence of CSHCN: Family Income
Kansas, 2005-2006**



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

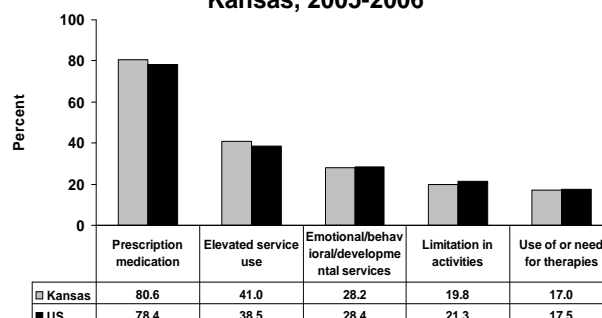
Families with CSHCN were more likely to have insurance than all Kansas families. In Kansas, almost 97% of families reported that their children had insurance at the time of the 2005-2006 National CSHCN survey. About two-thirds of CSHCN were reported to have private coverage, 25.6% had public coverage, 5.8% had both, and 3.1% had no insurance. Compared to 2001, a smaller percentage of CSHCN were reported to have private coverage (70.5% in 2001 vs. 65.4% in 2005-2006), and higher percentage were reported to have public coverage (16.8% in 2001 vs. 25.6% in 2005-2006). Both U.S. and Kansas CSHCN report that the need for prescription medication is by far the most common (80% of CSHCN). The next most frequently reported need is for additional medical, mental health, or educational services (41.0%), followed by the need for help with emotional, behavioral, or developmental problems (28.2%), limitation in activities (19.8%), and the use of specialized therapies (17.0%).

**Type of Health Insurance Coverage for CSHCN
Kansas, 2005-2006**



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

**Proportion of CSHCN: Experiencing Each
Consequence of Special Needs
Kansas, 2005-2006**



Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)

Data Source and Reference: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

CSHCN Insurance Coverage

KANSAS GOAL: Increase adequacy of insurance coverage for children with special health care needs.

Indicator: Percent of children with special health care needs ages 0 to 18 whose families have adequate private and/or public insurance to pay for the services they need.

Definition: “Adequate private and/or public insurance” is defined as access to health services including preventive care, primary care and tertiary care. Insurance covers costs of needed services, including: mental health, dental care, age-appropriate well-child care/monitoring, durable medical equipment, non-durable medical supplies, care coordination, prescriptions, specialty care, related therapies (e.g., physical therapy, occupational therapy, speech/language, audiology), in-home nursing. Insurance also provides timely approval for needed care, clear information to parents and providers about coverage, resources, complaint procedures, and overall parent satisfaction.¹

Significance: Children with special health care needs often require an amount and type of care beyond that required by typically developing children and are more likely to incur catastrophic expenses. Children and families often have disproportionately low incomes and, therefore, are at higher risk of being uninsured. Since children are more likely to obtain health care if they are insured, insurance coverage and the content of that coverage is an important indicator of access to care. Since children with special health care needs often require more and different services than typically developing children, under-insurance is a major factor in determining adequacy of coverage. Adequacy of insurance ensures comprehensive care, which in turn reduces emergency room visits, hospitalizations, and time lost from school.²

Healthy People 2010 Objectives: Related to Objective 16.23: Increase the proportion of States and jurisdictions that have service systems for children with or at risk for chronic and disabling conditions as required by Public Law 101-239. Related to Objective 1.1: Increase the proportion of persons with health insurance to 100%.²

Data Sources and References:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CYSHCN*. April 2004.
2. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
3. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
4. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).
5. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

Epidemiology and Trends

In Kansas, 2005-2006, 62.9% of CSHCN had adequate health insurance coverage according to the National CSHCN Survey. This compares to 62.0% for the U.S. The difference is not statistically significant ($p>0.05$). Kansas ranked 27th in the nation in terms of adequacy of insurance for CSHCN. Adequacy of insurance was assessed using three questions: 1) whether or not health insurance benefits met the child's needs, 2) whether non-covered charges were reasonable, and 3) whether the plan allows the child to see the providers he or she needs. In addition, children without any insurance at the time of the survey or at any time in the past year were considered not to have adequate insurance. The likelihood of achieving this outcome varied somewhat by family income from 61.5% of CSHCN in poverty to 71.0% of CSHCN with family incomes of 400% of poverty or more. A parallel trend was seen in the U.S. Many Kansas families have insurance policies that cover only well visits or catastrophic care.

Among the CSHCN who reported having adequate health insurance in the 2005-2006 National CSHCN survey, 96.9% of CSHCN reported having insurance at time of the interview and 90.7% reported having no gaps in coverage during the year before the interview. About 89% of CSHCN families reported that insurance usually or always met the child's needs, 73.5% reported that costs not covered by insurance were usually or always reasonable, and 92.6% reported that insurance usually or always permitted the child to see needed providers.

CSHCN Insurance Coverage Kansas and U.S., 2005-2006

CSHCN who have adequate public and/or private insurance to pay for the services they need.	
Kansas	62.9%
U.S.	62.0%

Child has public or private insurance at time of interview.	
Kansas	96.9%
U.S.	94.8%

Child has no gaps in coverage during year prior to the interview.	
Kansas	90.7%
U.S.	91.2%

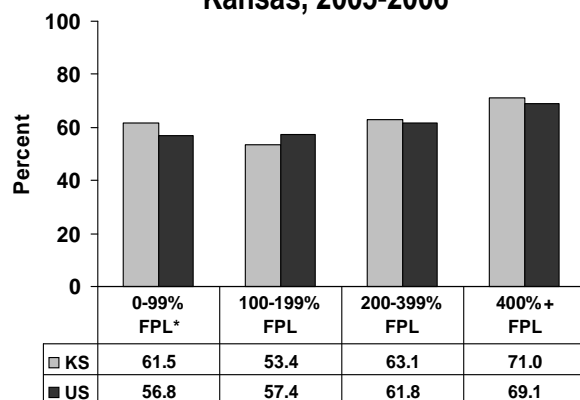
Insurance usually or always met child's needs.	
Kansas	89.4%
U.S.	87.3%

Costs not covered by insurance were usually or always reasonable.	
Kansas	73.5%
U.S.	72.0%

Insurance usually or always permitted child to see needed providers.	
Kansas	92.6%
U.S.	90.7%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.).³

CSHCN Insurance Coverage: Family Income Kansas, 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.).^{4,5}

Medical Home

KANSAS GOAL: Increase care within a medical home for children with special health care needs.

Indicator: Percent of children with special health care needs age 0 to 18 who receive coordinated, ongoing, comprehensive care within a medical home.

Definition: A medical home is (1) a regular source of primary medical care through a primary care provider, (2) a regular source of care that communicates in a way that is clear and understandable to the family, (3) a regular source of primary medical care that identifies, discusses, and addresses the comprehensive needs of their child and family, and ensures age-appropriate well-child checks, including: vision, hearing, developmental, behavioral/mental health, oral health, newborn screening, immunizations, and (4) provides referrals and assistance from the regular source of primary medical care in accessing needed/desired services.¹

Significance: Providing primary care to children in a “medical home” is the standard of practice. Research indicates that children with a stable and continuous source of health care are more likely to receive appropriate preventive care and immunizations, are less likely to be hospitalized for preventable conditions, and are more likely to be diagnosed early for chronic or disabling conditions. (AAP Medical Home Policy Statement, presented in *Pediatrics*, Vol. 100 No. 1, July, 2002)²

Healthy People 2010 Objective: Related to Objective 16.22: (Developmental): Increase the proportion of children with special health care needs who have access to a medical home.²

Data Sources and References:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CYSHCN*. April 2004.
2. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
3. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
4. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).
5. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

Epidemiology and Trends

The 2005-2006 National CSHCN Survey showed that 55.3% of Kansas CSHCN reported receiving care within a medical home, compared to 47.1% for the U.S. The Kansas outcome is significantly higher/better performance ($p < 0.05$) than the U.S. and ranked third in the nation. This outcome was evaluated using a series of questions: 1) whether the child has a personal doctor or nurse; 2) whether he or she has a usual source of sick and well-child care; 3) whether the child has had problems obtaining needed referrals; 4) whether the family is satisfied with doctors' communication with each other and the child's school and other systems; 5) whether the family gets help coordinating the child's care if needed; 6) whether the doctor spends enough time with the child; 7) whether the doctor listens carefully to the parent; 8) whether the doctor is sensitive to the family's customs; 9) whether the doctor provides the family with enough information; 10) whether the parent feels like a partner in the child's care; and 11) whether the family received interpretation services when needed.

Of the 55.3% of Kansas CSHCN receiving care within a medical home, 93.9% reported that they had a usual source of care and 95.5% had a personal doctor or nurse. Nearly 90% of Kansas CSHCN reported that they had no problems obtaining referrals when needed and 68% of Kansas CSHCN reported receiving effective care coordination when needed (i.e., professional care coordination when needed, or doctors communicate well with each other or with other programs). About 70% of Kansas CSHCN reported receiving family-centered care (i.e., doctors usually or always spend enough time, or listen carefully, or are sensitive to values and customs, or provide needed information, or make the family feel like a partner). This compares to 65.8% for the U.S. CSHCN in higher-income families were also more likely to have medical homes: 63.1% of CSHCN with family incomes of 400% poverty or more achieved this outcome, compared to 39.1% of children in poverty.

CSHCN Medical Home Kansas and U.S., 2005-2006

CSHCN who receive coordinated, ongoing, comprehensive care within a medical home.	
Kansas	55.3%
U.S.	47.1%

The child has a usual source of care.	
Kansas	93.9%
U.S.	92.9%

The child has a personal doctor or nurse.	
Kansas	95.5%
U.S.	93.5%

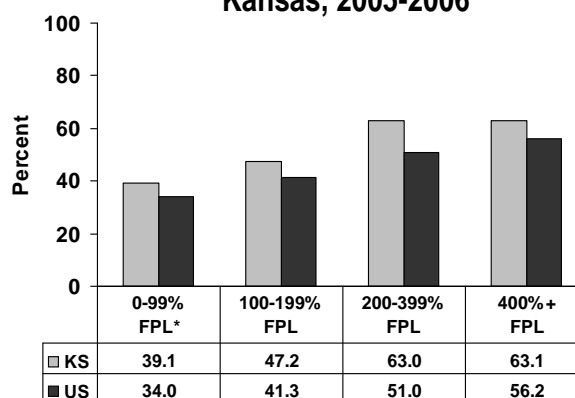
The child has no problems obtaining referrals when needed.	
Kansas	88.6%
U.S.	78.9%

The child receives effective care coordination.	
Kansas	68.0%
U.S.	59.2%

The child receives family-centered care.	
Kansas	69.7%
U.S.	65.8%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.).³

CSHCN Medical Home: Family Income Kansas, 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.).^{4,5}

Youth Transition

KANSAS GOAL: Increase the services necessary to transition to all aspects of adult life for youth with special health care needs.

Indicator: Percent of youth with special health care needs who received the services necessary to make transition to all aspects of adult life.

Definition: Transition includes (1) a plan that addresses employment, transportation, housing, independent living, physical/mental health, necessary accommodations, and includes appropriate agencies as part of the transition planning team, (2) a regular source of primary medical care that facilitates the transition from pediatric to adult providers, and (3) services/supports by age 21 that provide health insurance, post-secondary education, employment, transportation, housing, personal care attendant, Supplemental Security Income (SSI), Social Security Administration SSA-related work incentives (e.g., Plan for Achieving Self-Support (PASS), 1619 a&b).¹

Significance: The transition of youth to adulthood has become a priority issue nationwide as evidenced by the President's "New Freedom Initiative: Delivering on the Promise" (March 2002). Over 90% of children with special health care needs now live to adulthood, but are less likely than their non-disabled peers to complete high school, attend college or be employed. Health and health care are cited as two of the major barriers to making successful transitions.²

Healthy People 2010 Objective: Related to Objective 16.23: Increase the proportion of States and jurisdictions that have service systems for children with or at risk for chronic and disabling conditions as required by Public Law 101-239.²

Data Sources and References:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CYSHCN*. April 2004.
2. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
3. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
4. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).
5. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

Epidemiology and Trends

In the 2005-2006 National CSHCN Survey, the youth transition outcome was evaluated for CSHCN 12-17 years of age using four questions: 1) whether doctors had discussed the shift to adult providers, 2) whether doctors had discussed the child's changing needs as he or she approached adulthood, 3) whether anyone had discussed insurance coverage in adulthood, and 4) whether the child was usually or always encouraged to take responsibility for his or her health. This outcome was achieved for 50.3% of Kansas youth with special health care needs. This compares to 41.2% of U.S. youth with special health care needs, reporting adequate transition services. The Kansas outcome is significantly higher/better performance ($p<0.05$) than the U.S. and ranked eighth in the nation.

Among Kansas CSHCN who reported receiving transitional services, 48.9% reported receiving guidance and support in the transition to adulthood. In Kansas, generally, the vocational/educational transition is more comprehensive than transition to adult medical services. CSHCN living in poverty were about half as likely as high-income children to receive adequate transition services (58.0% vs. 30.1%). A parallel trend was seen for the U.S.

CSHCN Youth Transition Kansas and U.S., 2005-2006

Youth with special health care needs, who receive the services necessary to make transitions to all aspects of adult life, including adult health care, work, and independence.	
Kansas	50.3%
U.S.	41.2%

Doctors have discussed shift to adult provider, if necessary.	
Kansas	47.1%
U.S.	42.0%

Doctors have discussed future health care needs if necessary.	
Kansas	70.0%
U.S.	62.5%

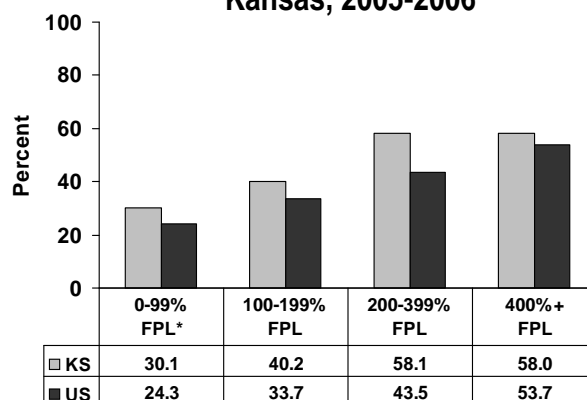
Doctors have discussed future insurance needs, if necessary.	
Kansas	43.7%
U.S.	34.1%

The child has usually or always been encouraged to take responsibility for health care needs.	
Kansas	83.9%
U.S.	78.0%

The child receives anticipatory guidance in the transition to adulthood.	
Kansas	48.9%
U.S.	38.2%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.).^{3,4}

CSHCN Youth Transition: Family Income Kansas, 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.).^{4,5}

Special Health Care Needs Screening

KANSAS GOAL: Increase the proportion of children who are screened early and continuously for special health care needs.

Indicator: Percent of CSHCN who are screened early and continuously for special health care needs.

Definition: In public health, screening often refers to a population-based intervention to detect a particular condition or disease. However, as used in the context, screening is much more comprehensive and includes ongoing monitoring and assessment of children and youth to promote health and well-being through family centered care practices.¹

Significance: Screening is critical to identify, as early as possible, children in the general population who have special health care needs so that they and their families can receive appropriate services to reduce long term consequences and complications. Some needs may be identified in infancy, or during the perinatal period, while others may emerge later in childhood and adolescence. It is equally important that children with special health care needs require ongoing assessments to identify newly emerging issues including developmental/behavioral issues, oral health, and psychosocial issues, development and well-being. Ongoing assessment should also focus on identifying the unique strengths of each child and family.¹

Healthy People 2010 Objective: Related to Objective 16.23: Increase the proportion of States and jurisdictions that have service systems for children with or at risk for chronic and disabling conditions as required by Public Law 101-239.²

Data Sources and References:

1. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.
2. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
3. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
4. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).
5. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

Epidemiology and Trends

According to the 2005-2006 National CSHCN Survey, 98.5% of Kansas CSHCN estimated that they were screened early and continuously for special health care needs compared to 63.8% for the U.S. The Kansas outcome is significantly higher/better performance ($p < 0.05$) than the U.S. and ranked eleventh in the nation. An estimate for this outcome was arrived at using two survey questions: 1) whether or not CSHCN received routine preventive medical care in the past year, and 2) whether they received routine preventive dental care during the past year.

Among Kansas CSHCN who were screened early and continuously for special health care needs, 82.5% reported receiving routine preventive medical care in past year and 80.9% reported receiving routine preventive dental care in past year.

Kansas CSHCN with higher family incomes were significantly more likely to be screened regularly: 79.9% of CSHCN with family incomes of 400% or more of the poverty level achieved this outcome, compared to 55.0% of CSHCN with family incomes below the poverty level. A parallel trend was seen in the U.S.

CSHCN Screened Kansas and U.S., 2001

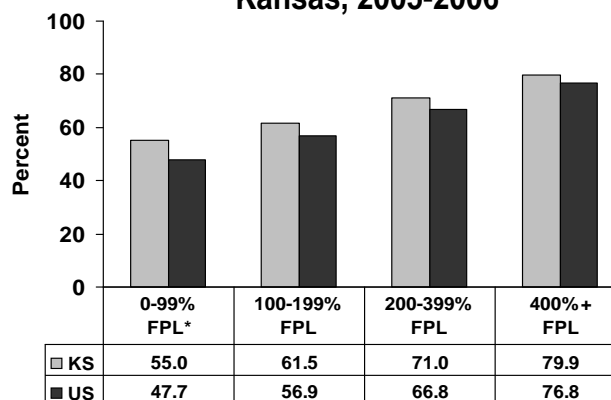
CSHCN who are screened early and continuously for special health care needs.	
Kansas	98.5%
U.S.	63.8%

Child has received routine preventive medical care in past year.	
Kansas	82.5%
U.S.	77.1%

Child has received routine preventive dental care in past year.	
Kansas	80.9%
U.S.	78.5%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.).^{3,4}

CSHCN Screened: Family Income Kansas, 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.).^{4,5}

Satisfaction with Services

KANSAS GOAL: Increase partnering in decision making and satisfaction with CSHCN services.

Indicator: Percent of CSHCN ages 0 to 18 years whose families partner in decision making at all levels and are satisfied with the services they receive.

Definition: Satisfaction with services includes: (1) satisfaction with the quality of regular source of primary care, getting referrals and appointments for needed services, coordination between primary and specialty care services; (2) satisfaction with their level of involvement/input in setting concerns and priorities to make decisions about their child's care plan; (3) knowing the steps to take when they are not satisfied with the services their child/family receives; (4) being supported financially for their involvement in state and local activities, including transportation, provision of stipends, employment of families, and child care; and (5) being effective partners in policy making at the state and local levels.¹ Family-centered care is based on the recognition that children live within the context of families - which may include biological, foster, and adoptive parents, step-parents, grandparents, other family caregivers, and siblings. Family-centered care is a process to ensure that the organization and delivery of services, including health care services, meet the emotional, social, and developmental needs of children; and that the strengths, and priorities of their families are integrated into all aspects of the service system. For example, family-centered care supports families as they participate as integral partners in the medical home and work with their children's health care professionals in making informed health care decisions. Family-centered care recognized that families are the ultimate decision-makers for their children, with children gradually taking on more and more of this decision-making as they mature.²

Significance: Family/professional partnerships have been incorporated into the MCHB strategic plan. The Omnibus Budget Reconciliation Act of 1989 (OBRA' 89) mandated that the States provide and promote family centered, community-based, coordinated care. Family satisfaction is also a crucial measure of system effectiveness.³

Healthy People 2010 Objective: Related to Objective 16.23: Increase the proportion of States and jurisdictions that have service systems for children with or at risk for chronic and disabling conditions as required by Public Law 101-239.³

Data Source and Reference:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CYSHCN*. April 2004.
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.
3. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
4. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
5. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).

Epidemiology and Trends

According to the 2005-2006 National CSHCN Survey, 65.6% of Kansas families partnered in decision-making at all levels, and were satisfied with services they received compared to 57.4% for the U.S. reporting satisfaction with services. The Kansas outcome is significantly higher/better performance ($p<0.05$) than the U.S., and ranked second in the nation. This outcome was evaluated using two questions: 1) whether the doctor makes the parent feel like a partner in the child's care, and 2) the parent's level of satisfaction with the child's health services. Children whose parents reported that they usually or always feel like a partner and that they are very satisfied with care were considered to meet the overall criterion.

Among the 65.6% of Kansas CSHCN families that partnered in decision making and were satisfied with the services received, 91.1% felt that their doctors usually or always made the family feel like a partner and 66.8% reported being very satisfied with services received. Children in higher-income families were also more likely to receive family-centered care: 70.3% of CSHCN with family incomes of 400% or more of poverty achieved this outcome, compared to 66.3% of CSHCN below 100% of the federal poverty level.

CSHCN Satisfaction with Services Kansas and U.S., 2005-2006

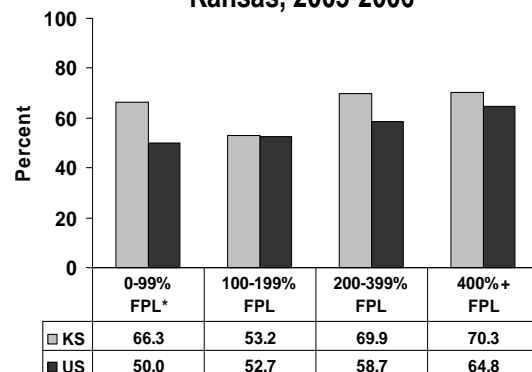
CSHCN whose families partner in decision-making and are satisfied with the services received.	
Kansas	65.6%
U.S.	57.4%

Doctors usually or always make the family feel like a partner.	
Kansas	91.1%
U.S.	87.7%

Family is very satisfied with services received.	
Kansas	66.8%
U.S.	59.8%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.).^{4,5}

CSHCN Satisfaction with Services: Family Income Kansas, 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.)^{4,5}

Community-Based Service Systems

KANSAS GOAL: Increase CSHCN access to organized community-based services.

Indicator: Percent of CSHCN ages 0 to 18 years whose families report the community-based service systems are organized so they can use them easily.

Definition: Community-based services include: (1) a single coordinated service plan that involves all providers and a lead service coordinator who communicates with the family; (2) the ability to access comprehensive services for their child and family; (3) having specialty care available in their region of the state; (4) the degree to which the state service system has an enrollment/eligibility process that links families of CSHCN (and their medical home) with a wide variety of public and private services and resources; and (5) private/public partnerships to provide community-based, comprehensive medical services for CSHCN (e.g., data sharing, contracts, Memoranda of Agreement).¹ Community-based system of services is an infrastructure that operates across service sectors. It facilitates the integration of services in several dimensions - including organization, delivery, and financing. The development of community-based systems of services is a response to the complexity and fragmentation of services for children with special health care needs and their families. Multiple service programs - each with its own funding streams, eligibility requirements, policies, procedures, and services sites - serve CSHCN. It is clear that communities and their resources affect the way families of children with CSHCN find and use services. Therefore, the health of communities themselves can have a positive effect on the growth and development of CSHCN. There now exist a number of initiatives to develop community development initiatives in communities throughout the Nation. The public sector has furnished much of the impetus for such initiatives, but the private sector, especially through the efforts of several national foundations, has increasingly become active in instituting such initiatives.

Significance: Families, service agencies and the Federal Interagency Coordinating Council (FICC) have identified major challenges confronting families in accessing coordinated health care and related services that families need for their children with special health care needs. Differing eligibility criteria, duplication and gaps in services, inflexible funding streams and poor coordination among service agencies are concerns across most states. Addressing these issues will lead to more efficient use of public funds and reduced family stress.²

Healthy People 2010 Objective: Related to Objective 16.23: Increase the proportion of states and jurisdictions that have service systems for children with or at risk for chronic and disabling conditions as required by Public Law 101-239.²

Data Source and Reference:

1. Early Intervention Research Institute. *Measuring and Monitoring Community-Based Systems of Care for CYSHCN*. April 2004.
2. Maternal and Child Health Bureau, U.S. Department of Health and Human Services. *MCH Services Title V Block Grant Guidance*. 2006.
3. Special Population Surveys Branch, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. *Progress Toward Implementing Community-Based Systems of Services for Children with Special Health Care Needs: Summary Tables from the National Survey of Children with Special Health Care Needs, 2005-2006*. December 19, 2007.
4. Child and Adolescent Health Measurement Initiative. *2005/2006 National Survey of Children with Special Health Care Needs*, Data Source Center for Child and Adolescent Health website (www.cshcndata.org).
5. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children with Special Health Care Needs Chartbook 2005-2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2007.

Epidemiology and Trends

According to the 2005-2006 National CSHCN Survey, 92.5% of Kansas CSHCN families reported that community-based service systems are organized so families can use them easily, compared to 89.1% for the U.S. The Kansas outcome is significantly higher/better performance ($p < 0.05$) than the U.S., and ranked third in the nation. However, it is a challenge to assure that services are available in all rural areas of the state. This outcome was assessed using a single question asking parents whether they had difficulties trying to use the range of services their children had needed over the past year.

In Kansas, 94.9% of children in the second highest income bracket achieved the objective, compared to the highest and the lowest income bracket of children (91.9% and 91.2% respectively). In the U.S., 92.0% of children in the highest income bracket achieved the objective, compared to 85.7% of children in poverty.

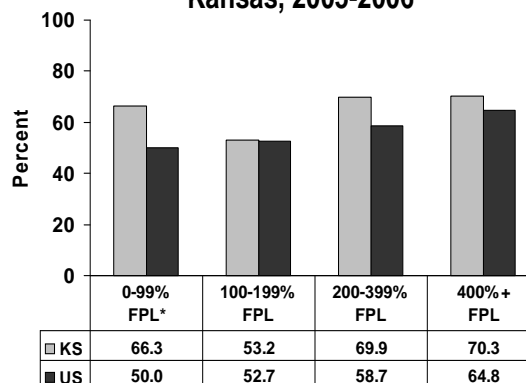
CSHCN Community-Based Service Systems Kansas and U.S., 2005-2006

CSHCN with community-based service systems that are organized so families can use them easily.	
Kansas	92.5%
U.S.	89.1%

Family has experienced no difficulties using services.	
Kansas	92.5%
U.S.	89.1%

Source: National Survey of CSHCN, 2005-2006 (Age 0-17 yrs.).^{3,4}

CSHCN Satisfaction with Services: Family Income Kansas, 2005-2006



Note: *Federal Poverty Level. In 2006, 100% of poverty was \$20,000 for a family of four.

Source: National CSHCN Survey, 2005-2006 (Age 0-17 yrs.).^{4,5}

SECTION IV

HEALTH STATUS INDICATORS

Poverty Status

KANSAS GOAL: Decrease the number of children and families in poverty.

Indicator: Percent of children and families in poverty.

Definition:

1. Poverty is defined by the federal government each year as individuals/families who earn less than a certain amount of dollars per year. The federal poverty level for a family of four in 48 contiguous states and D.C. was \$19,350 in 2005 and \$20,000 in 2006. For more information, please visit <http://aspe.hhs.gov/poverty/figures-fed-reg.shtml>.
2. Poverty status is defined by family. Either everyone in the family is in the poverty or no one in the family is in poverty. The characteristics of the family used to determine poverty status are number of people, number of related children under 18, and whether the primary householder is over age 65. For more information, please visit www.census.gov/hhes/www/poverty/poverty.html.

Significance: Poverty affects living conditions and access to health care and nutrition, all of which contribute to health status.¹ “The poor are at greater risk of becoming ill; Poverty affects access to health services; Poor health has adverse affects on productivity, which contributes to poverty.”²

Healthy People 2010 Objective: Eliminate health disparities among Americans - gender, race/ethnicity, education, income, disability, geographic location, sexual orientation.

Data Source and References:

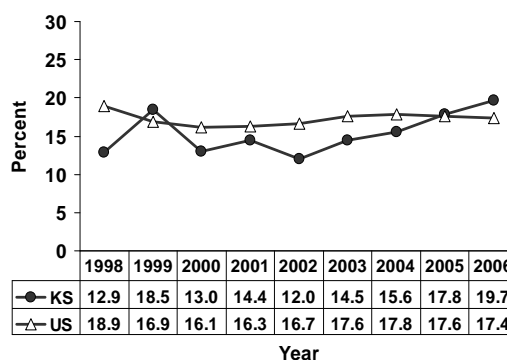
1. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Child Health USA 2006*. Rockville, Maryland: U.S. Department of Health and Human Services, 2006.
2. World Health Organization. *Poverty Reduction Strategy Papers (PRSPs) - Their Significance for Health: second synthesis report*. www.who.int/hdp/prsps/en/
3. U.S. Census Bureau. Current Population Survey (CPS). Annual Social and Economic (ASEC) Supplement. pubdb3.census.gov/macro/032007/pov/new46_100125_03.htm
4. U.S. Census Bureau. Current Population Survey (CPS). Annual Social and Economic (ASEC) Supplement. pubdb3.census.gov/macro/032007/pov/new46_100125_07.htm

Epidemiology and Trends

In 2006, compared to the U.S. population, a higher percentage of Kansans lived in households with incomes below the federal poverty level (12.8% vs. 12.3% for the U.S.) and a notably higher percentage of children under age 18 lived in households with incomes below the federal poverty level (19.7% vs. 17.4% for the U.S.). After exceeding the U.S. percent in 1999, the Kansas percent of children under 18 years of age below 100% of poverty remained below the U.S. percent for five years. Starting in 2005, the Kansas percent rose to match the U.S. percent. And then, for 2006, the Kansas percent of children living in poverty exceeded the U.S. percent. This trend bears monitoring. Since 2002, the percent of children under age 18 living in poverty has increased for Kansas compared to the U.S.³

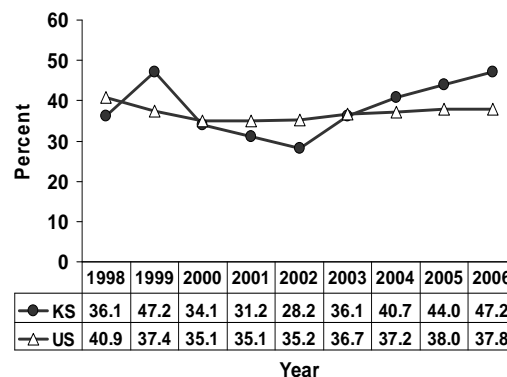
Overall, the percent of Kansas' families living at or below the federal poverty level (9.8%) is the same as the U.S. Poverty is more common in Kansas families headed by single females and those with children in the household, regardless of race or ethnicity. After exceeding the U.S. percent by almost 10 percentage points in 1999, the Kansas percent of female-headed households living below 100% FPL declined for three years to levels at or below the U.S. percent. For the years 2003-2006, the percent of Kansas female-headed households living in poverty increased and exceeded the U.S. rate.⁴ Most Kansas children under age 18 living in poverty live in three population centers: Sedgwick Co. (Wichita), Wyandotte Co. (Kansas City, KS) and Shawnee Co. (Topeka).

Percent of Children Under 18 Years of Age Below 100% of Poverty



Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement.
pubdb3.census.gov/macro/032007/pov/new46_100125_03.htm

Percent of Families with a Female Head of Household Below 100% of Poverty



Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement.
pubdb3.census.gov/macro/032007/pov/new46_100125_07.htm

Linguistic Isolation

KANSAS GOAL: Eliminate health disparities among Kansans - gender, race/ethnicity, education, income, disability, geographic location, sexual orientation.

Indicator: Percent of households linguistically isolated (language spoken at home is other than English).

Definition: A linguistically isolated household is one in which no person aged 14 or over speaks English at least “very well.” That is, no person aged 14 or over speaks only English at home, or speaks another language at home and speaks English “very well.” A linguistically isolated person is any person living in a linguistically isolated household. All the members of a linguistically isolated household are tabulated as linguistically isolated, including members under 14 years old who may speak only English. In Kansas, 2.1% of the households meet the definition of being linguistically isolated compared to 4.1% of U.S. households.^{1,2}

Significance: In the United States, the ability to speak English plays a large role in how well people can perform daily activities. How well a person speaks English may indicate how well he or she communicates with public officials, medical personnel, and other service providers.¹ It could also affect other activities outside home, such as access and the quality of health care received. People who do not have a strong command of English and who do not have someone in their household to help them on a regular basis are at even more of a disadvantage. Too often people with the greatest health burdens have limited access to relevant health information. In part, this is due to the complex and cumbersome ways health information often is presented, an individual’s limited abilities to fully interpret and understand complex health terminology and instructions, and to make personal decisions related to risk avoidance or risk reduction strategies. For instance, to follow health care instructions, patients need to be able to comprehend written and oral prescription instructions, directions for self-care, and plans for follow-up tests and appointments. In addition, health care providers may not communicate effectively with individuals. For instance, achieving informed consent for treatment is difficult when health care personnel cannot explain biological processes or treatment procedures in simplified language and patients cannot interpret health information. These situations hamper the effectiveness of health professionals’ efforts to prevent, diagnose and treat medical conditions, and limit many health care consumers’ abilities to make important health care decisions.

Healthy People 2010 Objective: Eliminate health disparities among Americans - gender, race/ethnicity, education, income, disability, geographic location, sexual orientation.

Data Source and Reference:

1. U.S. Census Bureau. *Language Use and English-Speaking Ability: 2000*. www.census.gov/prod/2003pubs/c2kbr-29.pdf
2. Kansas Health Institute. *Racial and Ethnic Minority Health Disparities in Kansas: A Data and Chartbook*. April, 2005. www.KHI.org
3. U.S. Census Bureau. 2006 American Community Survey. *Kansas Population and Housing Narrative Profile: 2006*. <http://factfinder.census.gov/>

Epidemiology and Trends

According to the 2006 American Community Survey, 6% of the people living in Kansas in 2006 were foreign born. Ninety-four percent were native, including 59% who were born in Kansas. Among people at least five years old living in Kansas in 2006, 10% spoke a language other than English at home. Of those speaking a language other than English at home, 64% spoke Spanish and 36% spoke some other language; 42% reported that they did not speak English “very well.”³

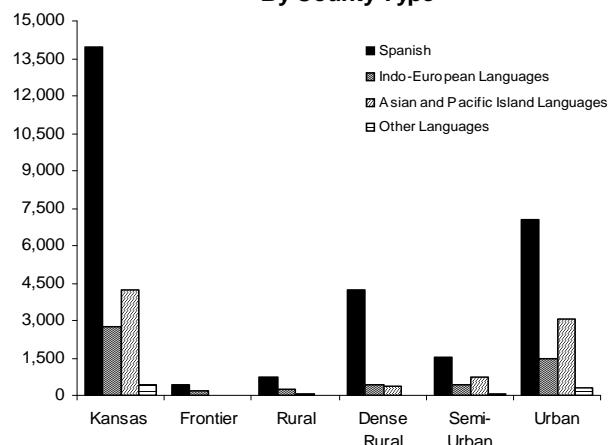
Based on the “*Racial and Ethnic Minority Health Disparities in Kansas - A Data and Chartbook*,” there are approximately 21,000 households in Kansas that are linguistically isolated (2000 U.S. Census). The majority of these households (approximately 11,000) are in urban counties, although dense rural counties also have a large number of these households (about 5,000). There are approximately 39 languages in Kansas represented by linguistically isolated households. Nearly two-thirds of linguistically isolated households in Kansas speak Spanish. One-fifth speaks an Asian or Pacific Islander language. Counties with the largest number of linguistically isolated Spanish-speaking households include urban counties (Sedgwick, Wyandotte, Johnson, and Shawnee) as well as the larger Southwest Kansas counties (Finney, Seward and Ford). Seward, Finney, and Ford counties have the greatest proportion of households that are linguistically isolated (16%, 13%, and 11%, respectively) within the state.²

Counties with Largest Number of Spanish-Speaking Households

Top 8 Counties	Number of Households
Sedgwick	2,654
Wyandotte	2,340
Finney	1,466
Johnson	1,299
Seward	1,164
Ford	1,118
Shawnee	632
Lyon	616

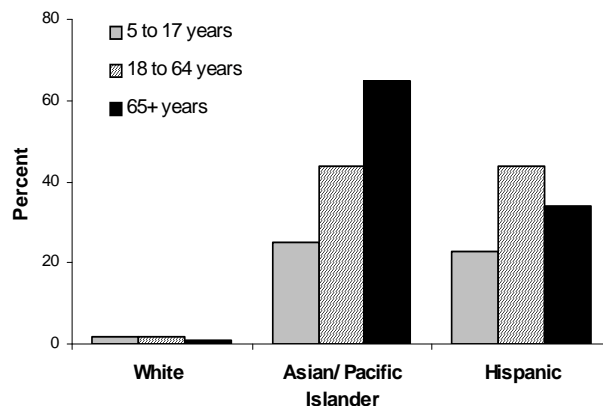
Source: Kansas Health Institute. Racial and Ethnic Minority Health Disparities in Kansas: A Data and Chartbook (Data: 2000 U.S. Census).

Linguistically Isolated Households by Language By County Type



Source: Kansas Health Institute. Racial and Ethnic Minority Health Disparities in Kansas: A Data and Chartbook (Data: 2000 U.S. Census).

Percent by Age Group Who Do Not Speak English "Very Well"



Source: Kansas Health Institute. Racial and Ethnic Minority Health Disparities in Kansas: A Data and Chartbook (Data: 2000 U.S. Census).

Counties with Largest Number of Asian/Pacific Islander Languages Households

Top 8 Counties	Number of Households
Sedgwick	1,681
Johnson	748
Douglas	363
Riley	231
Wyandotte	215
Finney	115
Saline	115
Geary	106

Source: Kansas Health Institute. Racial and Ethnic Minority Health Disparities in Kansas: A Data and Chartbook (Data: 2000 U.S. Census).

Utilization of Health Care

KANSAS GOAL: Improve utilization of Medicaid/SCHIP by Kansas children.

Indicators:

1. Percent Medicaid enrollees (ages 0-20) during the reporting year who received at least one initial periodic screen.
2. Percent of Medicaid enrollees (ages 0-20) who have received any dental services during the year.
3. Percent of SCHIP enrollees (ages 0-19) during the reporting year who received at least one initial periodic screen.
4. Percent of SCHIP enrollees (ages 0-19) who have received any dental services during the year.

Definition: (1) EPSDT - Kansas Early and Periodic Screening Diagnostic and Treatment services, Medicaid's comprehensive and preventive health program for eligible children under the age of 21, is commonly known as KAN-Be-Healthy (KBH).¹ A child should be able to receive examination, treatment, and when necessary, referral services from one provider to another provider. This program allows participating individuals to receive any services which are medically necessary. In order to be considered a program participant and receive additional services, individuals must follow the screening schedule.² (2) HealthWave19, a traditional Kansas Medicaid Program, has no premium costs, no co-pays or deductibles for covered children.³ (3) HealthWave21 - State Children Health Insurance Program (SCHIP) is a Federal/State partnership, similar to Medicaid. The goal is to expand health insurance access to children whose family incomes exceed Medicaid guidelines. It was created for uninsured children, ages 0-19, living in households with income levels at or below 200% of the federal poverty level. Some families qualify for no premium health insurance. Others will have minimal monthly premiums. There are no co-pays or deductibles and no exclusions for pre-existing conditions with HealthWave21.³

Significance: Financial, structural, and personal barriers can limit utilization of health care. Financial barriers include not having copay for health insurance, not having enough health insurance to cover needed services, or not having the financial capacity to cover services outside a health plan or insurance program. Structural barriers include the lack of primary care providers, medical specialists, or other health care professionals to meet special needs or the lack of health care facilities. Personal barriers include cultural or spiritual differences, language barriers, not knowing what to do or when to seek care, or concerns about confidentiality or discrimination.⁴

Healthy People 2010 Objective: Improve access to comprehensive, high-quality health care services.⁴

Data Sources and References:

1. Kansas Department of Social and Rehabilitation Services. *HCBS/TBI Waiver, Policies & Procedures: Glossary*. www.srskansas.org/hcp/css/pdf/hippp/PTBIGlossary.pdf
2. General Definition. www.gwumc.edu/sphhs/healthpolicy/nnhs4/GSA/Subheads/gsa100.html
3. HealthWave History. www.kansashealthwave.org/hwhistory.asp
4. U.S. Department of Health and Human Services. *Healthy People 2010. 2nd Ed. With Understanding and Improving Health and Objectives for Improving Health*. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000. Page 45 and Page 1-3.
5. Kan-Be-Healthy and SCHIP reports (Federal Fiscal Year 2007: 10/1/2006 - 9/30/2007).

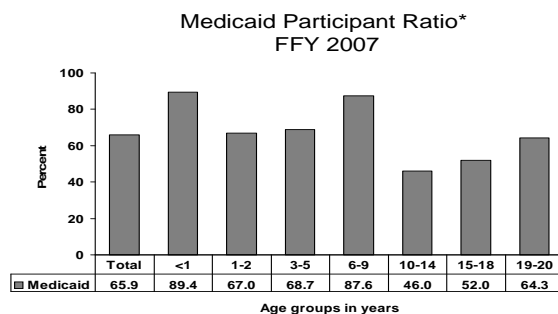
Epidemiology and Trends

For calendar year 2006, the percent of Medicaid-eligible children who received a service paid by the Medicaid Program was 95.7% (220,505/230,444).⁵ This percentage is based on the number of Medicaid-eligible children (denominator) and the actual number receiving services ages 1 through 21 (numerator).

A report submitted by Kansas Department of Social and Rehabilitation Services (SRS) to the Center for Medicare and Medicaid Services (CMS) showed the participation ratio for Kansas Medicaid enrollees (ages 0-20) for KBH screens rose from 60.5% in FFY 2006 to 65.9% in FFY 2007. Although, this did not reach the CMS goal of 80% participation in EPSDT (KBH) screening services, there has been much improvement in getting children into care. When evaluating trend in the last 3 years (FFY 2003 -2007), the increase in the percent of enrollees who received at least one initial or periodic screen is statistically significant ($p < .0001$). The percent of enrolled children getting at least one screen increased 22.8%, from 53.7% in FFY 2005 to 65.9% in FFY 2007. The number of enrolled children continues to increase each year, as does the number actually getting into services.

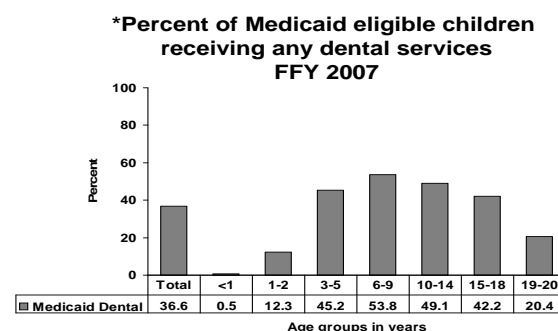
The participation ratio for Kansas SCHIP enrollees (ages 0-19) was 24.1% in FFY 2007. This is a 51.2% decrease over the 49.3% participation ratio in FFY2006. There has been a steady decline in the percent of SCHIP children receiving a screen. Comparing the Medicaid data to the SCHIP data, the SCHIP numbers and ratios are considerably low.

Note: In November 2003, the Medicaid Management Information System (MMIS) went live, and all of the encounter data files changed from Blue Cross and Blue Shield (BCBS) proprietary files to HIPAA standard code sets. However, reliable flow of data began in the summer of 2004. With the new system, SRS changed eligible codes. The new system allows for a broad range of codes to be counted as KBHs. During the MMIS data update in 2003, having a current EPSDT was removed as a requirement prior to receipt of expanded services. Now participants can receive services without having a current KBH on file.



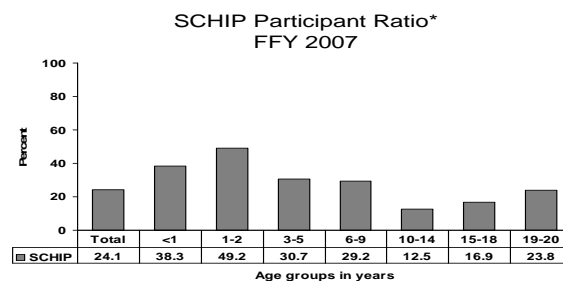
*Participant Ratio = $\frac{\text{Total eligibles receiving at least one initial or periodic screen}}{\text{Total eligibles who should receive at least one initial or periodic screen}}$

Source: Medicaid Kan Be Healthy annual participant report.
Report Period: 10/1/2006-9/30/2007



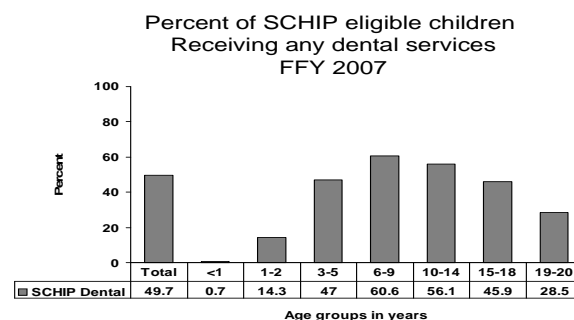
*Medicaid Dental % = $\frac{\text{Number of eligible receiving any dental services}}{\text{Number of individuals eligible for Kan Be Healthy}}$

Source: Medicaid Kan Be Healthy annual participant report.
Report Period: 10/1/2006-9/30/2007



*Participant Ratio = $\frac{\text{Total eligibles receiving at least one initial or periodic screen}}{\text{Total eligibles who should receive at least one initial or periodic screen}}$

Source: SCHIP Kan Be Healthy annual participant report.
Report Period: 10/1/2006-9/30/2007



*SCHIP Dental % = $\frac{\text{Number of eligible receiving any dental services}}{\text{Number of individuals eligible for Kan Be Healthy}}$

Source: SCHIP Kan Be Healthy annual participant report.
Report Period: 10/1/2003-9/30/2004

SECTION V

Special Projects

Survey Reports on Physician Capacity to Provide Genetic Information/Service

Rachel Lindbloom, MA, LSCSW

Office of Health Assessment, Center for Health and Environmental Statistics

The Office of Health Assessment (OHA) at the Kansas Department of Health and Environment (KDHE) has completed a report on physician capacity to provide genetically-based program services. It is located at http://www.kdheks.gov/bcyf/download/2007_genetics_summary_report.pdf.

The report was prepared because the role of the physician in providing basic genetic medicine is growing and genetics issues are becoming increasingly important to practices. Although there are specialists in medical genetics, it is reported that there are not enough specialists to meet the growing demand for genetic guidance¹. Physicians recognize that they have a role in explaining medical genetics to patients and discussing with them the impact of genetics on health outcomes², but physicians need current information in order to carry out their role.

To address the growing need for genetics information and assure adequate continuing education opportunities are available to physicians, a study was undertaken to determine current status and perceived need. KDHE sponsored the project in collaboration with the University of Kansas Medical Center (KUMC). Funding for the project was obtained through a federal grant to the eight-State Heartland Genetics Consortium at the University of Oklahoma Health Science Center.

The Office of Health Assessment conducted a survey of primary care physicians. They were asked to complete and return a questionnaire about the demand for genetics services and the need for continuing education either by mail or Internet.

Survey findings show respondents were experienced and mainly clinical primary care medical doctors licensed by the Kansas State Board of Healing Arts. Most of the physicians reported that they do not see patients with identified genetics problems or make genetically related referrals. Of those who do, an average number of three patients were referred to other medical practices by clinical primary care physicians over the last 12 months. Surveys showed that most clinical physicians are aware of genetics referral resources.

Policy implications from this study include:

- ❑ Genetics resource information should be made available to the general public and to all primary care physicians, counselors or other medical providers via circulars, program materials and on the Internet.
- ❑ Coordinated assistance should be made available to physicians so that they can include genetics service planning in their medical practices.
- ❑ Information about available services should be distributed that can be provided by genetics counselors to physicians, providers and the public via circulars, program materials and on the Internet.
- ❑ Information should be prepared on cord blood banking and made available via circulars and the Internet for physicians, providers and the public.
- ❑ Continuing education courses should be provided on “Genetics of Specific Conditions”, “Basic Genetics 101”, and “Ethical and Legal Issues of Genetics” via self-study training manuals, interactive CD-ROM, conveniently located one-day weekend conferences and via the Internet.

References

1. Greendale, K., Pyeritz, R., Empowering primary care health professionals in medical genetics: How soon? How fast? How far? *Am J Med Genet*, 2001; 106:223-32.
2. Watson, E., Austoker, J., Lucassen, A. A study of GP referrals to a family cancer clinic for breast/ovarian cancer. *Fam Pract*, 2001; 18:1313-4.

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Child Care Health Consultation Training: Expanding the Role of Public Health Nurses

Brenda J. Nickel, RN, BSN

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Kansas has been working with other stakeholders to develop an early childhood comprehensive systems plan called the Kansas Early Childhood Comprehensive Systems Plan (KECCS) that can be viewed at <http://www.keccs.org/>. Partners in this endeavor include the Maternal and Child Health Program at the Kansas Department of Health and Environment, the Kansas Children's Cabinet, the Kansas Department of Social and Rehabilitative Services, the Kansas State Department of Education, Kansas Action for Children, the Kansas Health Foundation, the Governor's Office and other critical stakeholders. The premise of the plan is to create an early childhood system in Kansas that addresses five core areas that will identify gaps and implement strategies that will strengthen families, improve the health of children and influence school readiness.

The five goal domains of the plan include:

1. Health Insurance and Medical Homes
2. Mental and Social-Emotional Development
3. Early Care and Education Services
4. Parent Education
5. Family Supports

Under the KECCS plan and the goal of Health Insurance and Medical Homes, the objective is to increase the number of children in Kansas who have access to both health insurance and medical home. One strategy is to develop a health care consultation model that would assist child care providers in identifying and meeting health needs of children, assuring outreach and enrollment of children eligible for Medicaid and HealthWave, as well as provide technical assistance and education regarding issues related health, safety, early intervention services and case management of chronic health conditions in children birth to school age.

Public health nurses already serve as health consultants within their communities for individuals, families, and other entities that serve children. As public health experts emphasizing prevention, health promotion, and protection, professional nurses are in pivotal positions to expand these ideals to impact health and safety of children aged birth to 8 who are in out of home care settings through child care health consultation services to child care providers and the families they serve.

Through thoughtful collaboration with providers, CCHCs can support providers working in home or center-based Early Childhood Education (ECE) programs with best practices for teaching good health behaviors, creating safe environments, and creating linkages to support providers and families with developmental and socio-emotional screening, oral health, and nutrition. In addition, CCHCs can assist in policy development at centers and providing specialty consultation related to children with special health care needs

The Bureau of Family Health, Children & Families Section will be initiating training for professional nurses in local health departments to become Child Care Health Consultants (CCHC) utilizing the University of North Carolina's National Training Institutes (NTI) Child Care Health Consultation curriculum. Currently, curriculum development and training plans for child care health consultation is beginning with the anticipated date for initiating training in March of 2009. The Bureau of Family Health has a registered nurse who has been certified

as a child care health consultant through the NTI program at Chapel Hill. This consultant will coordinate and deliver the training in partnership with a variety of health professionals and child care professionals. Didactic content will be delivered face-to-face as well as using web-based resources of on-line learning and webinar delivery formats.

This training will broaden the State's infrastructure and capacity to impact families whose children are not yet in school and who are provided care in out of home settings.

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Bright Futures: Exploring Training for Kansas

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Developed by the National Center for Education in Maternal and Child Health (NCEMCH) at Georgetown University in 1990 for use by various health providers and other community entities, *Bright Futures* are recommended guidelines to create partnerships between families, communities, and health care providers to achieve desired developmental outcomes for children and adolescents, increase family knowledge and participation in prevention and health promotion activities, and enhance health care professionals' knowledge in providing developmentally appropriate health care for families and their communities (Green & Palfrey, 2000). *Bright Futures* guidelines are recommended for use at public health departments in Kansas who participate in the Maternal Child Health (MCH) services program administered through the Kansas Department of Health and Environment (KDHE). The American Academy of Pediatrics (AAP) endorses the use of the guidelines by physicians working with children and adolescents.

Our project was twofold. First to survey health agencies, pediatricians and nurses, mental health providers, and other professionals who have contact with families and children to determine the extent to which this program is being utilized in health and educational settings. The survey was designed to assess professionals' knowledge of the *Bright Futures* guidelines, as well as the desire of professionals and agencies to participate in one or more trainings focused on learning to use the *Bright Futures* guidelines as a framework for providing health care to children. The second aspect of our project was to develop a plan for providing information and training that provide a thorough overview of *Bright Futures*, including a format to train professionals to use the guidelines and materials in their daily work with families.

While the scope of this project was to assess professionals knowledge of *Bright Futures* and the need or desire for training, it is our intent to engage professionals and interested groups in exploring the benefits of utilizing a framework statewide that embraces the *Bright Futures* mission "To promote and improve the health, education, and well-being of infants, children, adolescents, families, and communities" (AAP, 2007).

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Kansas School Nurse Survey, 2006-2007

Carol Moyer, MPH, RN¹, Jane Stueve, RN, BSN²

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Introduction

The Kansas Department of Health and Environment (KDHE) is committed to quality school health services and provides guidance and consultation to Kansas school nurses. Each year, the Department conducts a survey of school nurses in the state to assess workforce capacity along with other emergent issues.

Methods

A survey was developed by KDHE staff along with a spreadsheet for data collection with input from a select group of school nurses. Information about the upcoming survey was provided to school nurses attending the July, 2006 annual school nurse conference. Additional information was provided in ZIPS, the school nurse newsletter. In January of 2007, the two documents were posted on the KDHE website to invite further comments from any school nurse in the state.

In May of 2007, the on-line survey was posted to the KDHE website. An email notice was sent to each school nurse listed in the KDHE school nurse database asking that each Kansas school nurse who provides face-to-face care to students and/or oversees services provided by ancillary personnel complete the online survey.

The data was compiled in summary format. Individual nurses and schools were not identified. Questionnaire results were analyzed using SAS, version 9.1.

Results

A total of 491 school nurses from 77 Kansas counties responded or about 58% of all the school nurses listed in the KDHE database. Ninety-seven percent (474) of respondents reported that they were RNs while 3% (17) reported that they were LPNs. Seventy-six percent of registered nurses had a Bachelor of Nursing or a more advanced degree. Forty-eight percent of respondents were over the age of 50. The majority of school nurses who responded to the survey are funded by Local Boards of Education.

Health Screening Outcomes

Survey results show that 92% of respondents who provided direct care to students reported conducting health screenings during the 2006-2007 school year. Statistical analysis shows that among vision and hearing screenings, as the number of students assigned increases, the percent of completed referrals decreases. Also, among vision and hearing screening, a higher percent of referrals are completed among full time nurses with one school compared to two or more schools. There is no correlation between referrals completed for oral health screening and number of students enrolled.

Access to School Nurse Services

The National Association of School Nurses recommends that, “Every student should have access to a full-time registered school nurse all day in each school.” In Kansas, 81% of nurse respondents who provided direct care to students reported they worked full-time (at least 1,116 hours), although many cover more than one school. Based on respondent data, more populous counties are more likely to have full-time nurses, rural and frontier counties are less likely to have full-time nurses. School nurses in frontier and rural counties are more likely to cover multiple school buildings.

Health Room Visits by Percent of Students Enrolled

- ❑ In the 858 schools represented by this survey, 196,099 students visited the health room, 62% of students enrolled.
- ❑ After assessment and/or treatment by a school nurse, the majority (81%) of the students visiting the nurse’s office with an illness or injury complaint were returned to the classroom to continue their studies.
- ❑ There is no correlation between percent of students sent home and number of students enrolled. However, there is a correlation between the percent of students sent home and the number of schools assigned to a full time nurse. As the number of schools assigned to a full time school nurse increases, she/he spends less time in each school building and the percent of students sent home increases.

Medical Home

The American Academy of Pediatrics recommends that, “All children should receive ongoing care in a medical home.” Survey results showed that 43% of school nurses had a protocol in place to identify a regular source of medical care (medical home) for students.

Summary

These results provided an overview of workforce, quality and other issues for the Kansas school nurses who responded to this survey. Two important issues included aging of school nurses and student access to nursing services. Access to health services becomes more difficult when nurses are assigned more than one school. Also, the number of schools assigned appear to effect quality of care.

As the number of schools increases, fewer screening referrals are completed. High work volume was shown by the percent of enrolled students (62%) who visited the health room at least once during the school year.

Another important issue for school nurses was management of students with chronic health problems. In Kansas, among school nurses who responded to the survey and completed the level of care section, 13% of children who visited the health room had a chronic condition, many requiring frequent and ongoing care.

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Linking MCH and WIC Databases to Evaluate Birth Outcomes: Pilot Project

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Introduction

Program evaluation with measurable outcome measures is a vital aspect of public health. In the Maternal & Infant (M&I) and Healthy Start Home Visitor (HSHV) Programs, it has been difficult for local programs to link the care given to pregnant women with birth outcomes. One way to gain additional data on M&I or HSHV prenatal clients is through data linkage with WIC data. Using records from the WebMCH and KWIC databases for one county we tested the feasibility of linking MCH and WIC data for program evaluation purposes. The project, using deterministic methodology, was designed to evaluate live birth outcomes such as low birth weight, prematurity and breastfeeding status.

Methods

WebMCH data (M&I or HSHV) included visits from 1/1/2005 through 8/30/2005. WIC data included postpartum WIC visits from 1/1/2005 through 8/30/2006. The variables used for the linkage (merge) included mother's last name, mother's first name, and mother's date of birth. Analysis was done using SAS, version 9.1.

Results

In the 9 month time period, 120 pregnant women had at least one client visit in either the M&I or HSHV programs or both. Thirty women had client visits in both M&I and HSHV Programs, thirty women had M&I program visits only and sixty women had HSHV visits only.

The linked data (mother's last name, mother's first name and DOB or mother's last name and DOB) included 91 clients (76% of pregnant M&I and HSHV program clients). Of these 91 clients, 24 women had both M&I and HSHV visits, 23 women had M&I only visits and 44 women had HSHV only visits.

Discussion

For this county, the percent with matching records was high enough for analysis of birth outcomes. However, the number of infants with the outcomes of interest is too small for data reliability, comparisons with other data sources (state, region or county). Outcomes using linked data will only be available for the pregnant women who participated in the WIC program after delivery of their infants.

Conclusion

It is feasible to use data linkage between M&I, HSHV the WIC Programs for evaluation of program effectiveness in improving birth outcomes. However, it is important to include socioeconomic indicators such as mother's education and insurance status as well as race or ethnicity. These factors may modify the effect of the MCH and WIC program interventions.

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Selected Birth Outcome Findings from the Revised Birth Certificate 2005, Kansas

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Kansas adopted a new birth certificate form and implemented a new on-line electronic reporting system effective in 2005. The new certificate resulted in a number of changes to existing data items and the addition of new questions. Data on selected characteristics were analyzed to assess data quality and comparability issues.

Selected descriptive tabulations of data reported on the 2005 Kansas birth certificates for all in-state occurrence births are presented.

During 2005, there were 40,567 Kansas occurrence births using the new birth certificate. Almost one of every five births (18.3%) occurred to women of non-white race. The primary language spoken by birth mothers was non-English in over one in 10 (10.3%) births. The percentage of women smoking during the pregnancy declined from 16.1% in the first trimester of the pregnancy to 14.1% in the third trimester. Changes to the method of calculating the month prenatal care began affected the numbers and rates for trimester care began and Adequacy of Prenatal Care Utilization (APNCU). Resulting rates are not comparable with previous data years. Almost one in three birth mothers (31.7%) obtained WIC food for herself during the pregnancy. Medicaid was reported as the principal payment source for delivery for over one out of four births (27.3%).

To view the full report, please visit www.kdheks.gov/ches/download/Prelim_Findings_2005a.pdf. For more information, contact Greg Crawford at gcrawfor@kdhe.state.ks.us.

Smoking in Pregnancy and the Revised Birth Certificates - Implications for the MCH Programs

Carol Moyer MPH, RN, Karen Sommer, MA
Office of Health Assessment, Center for Health and Environmental Statistics

The Bureau of Family Health's Needs Assessment (MCH2010) identified addressing prematurity and low birth weight as priority needs for the State. Smoking during pregnancy was selected as a proxy to monitor progress.

The concern about smoking during pregnancy has been long-standing and is linked to adverse pregnancy outcomes, including low birthweight (LBW), intrauterine growth retardation, miscarriage, and infant mortality, Babies born to women who smoke are at substantially greater risk of LBW than babies born to nonsmokers.¹

Kansas resident birth data (2005) indicates 7.2% of all live births are low birth weight, 6.4% among non-smokers and 11.0% among smokers.²

Before 2005, on the Kansas birth certificate (unrevised version), tobacco use was collected with a simple "yes/no" question on smoking tobacco during pregnancy. In contrast, the revised version asks for smoking tobacco during each trimester of pregnancy (as well as the 3-month period prior to pregnancy).

The National Center for Health Statistics has addressed this issue:

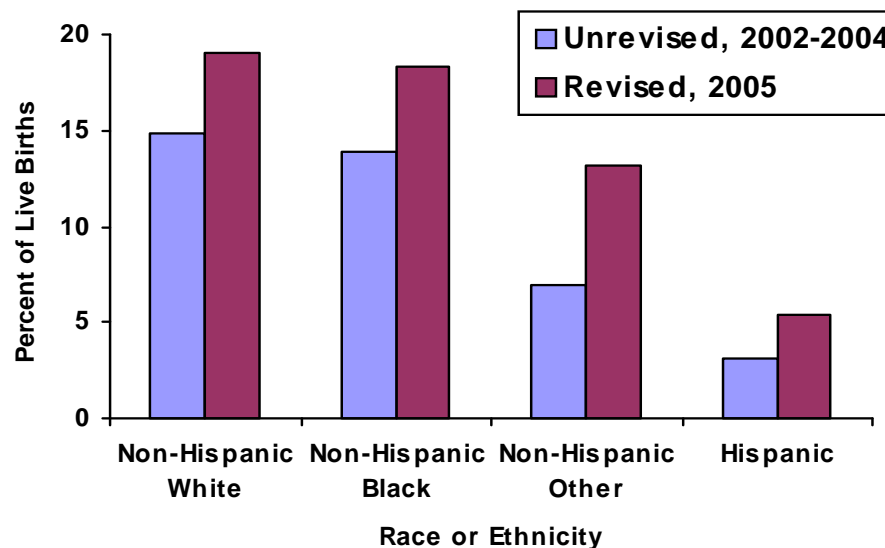
Studies based on the unrevised smoking question have suggested some underreporting of smoking on the birth certificate. Some of the underreporting no doubt reflected the lack of a specific time reference, that is, when during pregnancy the mother smoked. It is believed that the new question on prenatal smoking is providing higher quality, more reliable information in part because there is a specific time reference (each trimester) and women are afforded the chance to report that their smoking behavior has changed.³

This change in data collection for smoking during pregnancy has significant implications for maternal and infant outcome measures. Rates or percents for 2005 or later are not comparable to those prior to 2005. Also, since other states have not implemented the revised birth certificate, we do not have this information on Kansas residents who have given birth out of state.

When comparing data from 2004 and 2005, the differences in data collection become apparent. In Kansas, 2004, with the unrevised version, in 12.4% of live births, the mother reported smoking during pregnancy.² This percent compares to 10.2% nationally (same time period) among states using this version of the birth certificate. For this same year, among the seven states using the revised birth certificate, 16.3% of mothers reported smoking at some time during pregnancy.

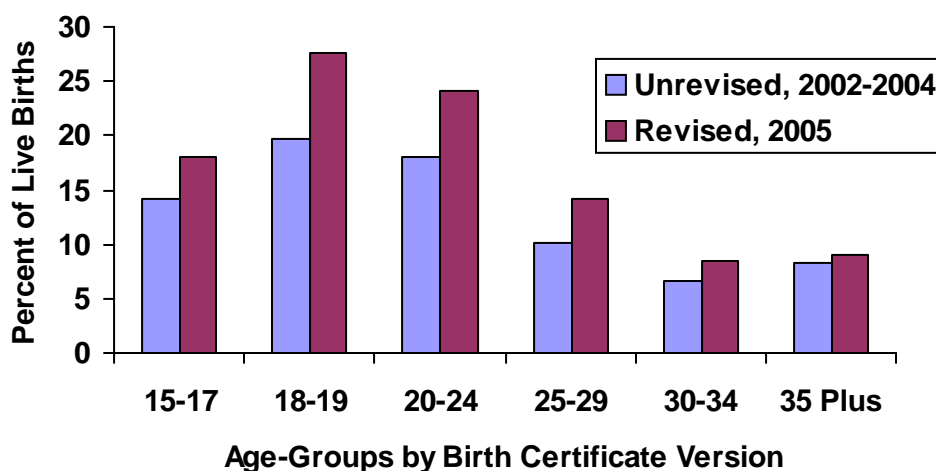
For Kansas, 2005, the percent of live births where the mother reported smoking sometime during her pregnancy was 16.3% (the same percent as the states using the revised birth certificate, 2004) data.² Nationally, despite the differences in smoking level between the two birth certificate versions, the variations among population subgroups by race and Hispanic origin persist. In Kansas, the variations by race or ethnicity are also comparable between the two versions of the birth certificate (Figure 1).

Figure 1: Live Births Where the Mother Reported Smoking during Pregnancy by Race or Ethnicity.



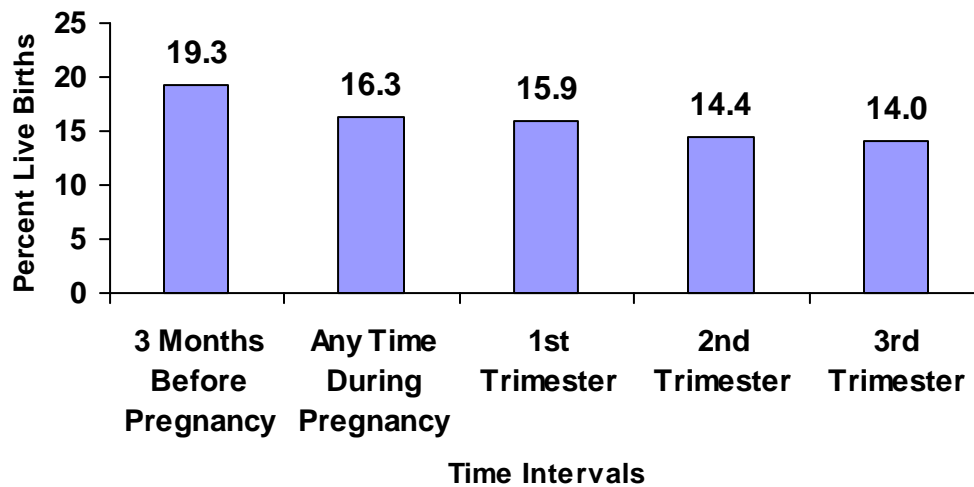
In Kansas, overall, the age distribution is also comparable between the two versions of the birth certificate (Figure 2) with the greatest difference between the 18-19 year old mothers.²

FIGURE 2: Percent of Live Births Where the Mother Reported Smoking at Any Time During Pregnancy by Age Group and Version of the Birth Certificate, Kansas, 2005



For Kansas, 2005, in 16.3% (n=6475) of live births (Figure 3), the mother reported smoking sometime during her pregnancy, in 19.3% of live births, the mother reported smoking in the three months before pregnancy. Of the mothers who reported smoking before pregnancy, 25.4% reported quitting by the second trimester and an additional 2.8% reporting quitting by the third trimester.²

FIGURE 3: Percent of Mothers Who Reported Smoking Before or During Pregnancy by Selected Time Intervals, Kansas, 2005



We will continue to assess this indicator and also others to gauge the impact of data from the new birth certificate on critical MCH indicators – to monitor the health status of mothers and children in Kansas.

References

1. Centers for Disease Control and Prevention. Smoking During Pregnancy — United States, 1990–2002. MMWR 2004;53:911-915.
2. Office of Health Assessment, Center for Health and Environmental Statistics, Division of Health, Kansas Department of Health and Environment.
3. Martin JA, Hamilton BE, Sutton PD, et al. Births: Final data for 2004. National Vital Statistics Reports; vol. 55, no 1, Hyattsville, MD: National Center for Health Statistics. 2006.

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Adequacy of Prenatal Care Utilization Index Kansas, 2006

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Introduction

Prenatal care is defined as pregnancy-related health care services provided to a woman between conception and delivery. It is important to track because there is a strong association between prenatal care and pregnancy outcome. Pregnant women who receive inadequate care are at increased risk of bearing infants who have low birth weight, are stillborn, or die within the first year of life.¹ This data can be analyzed to suggest population groups and geographic areas in need of intervention, therefore protecting the health of these future Kansans.

Accurate measurement of prenatal care depends on the accuracy of the index used. Beginning with 1998 data, the Kansas Department of Health and Environment (KDHE) transitioned from a modified Kessner Index to the Adequacy of Prenatal Care Utilization (APNCU) Index, (often referred to as the Kotelchuck Index).² This index attempts to characterize prenatal care (PNC) utilization on two independent and distinctive dimensions: adequacy of initiation of PNC and adequacy of received services (once PNC has begun). The index uses information readily available on the Kansas birth certificate (number of prenatal care visits, date of first prenatal visit, date of last menses, and gestational length of pregnancy). The APNCU Index combines these data to characterize adequacy of pregnancy-related health services provided to a woman between conception and delivery. The APNCU categorizes care as inadequate, intermediate, adequate or adequate plus. The index does not assess quality of the prenatal care that is delivered, only its utilization.

This summary is an enhancement of information contained in the 2006 *Annual Summary of Vital Statistics*. Both products can be found at: <http://www.kdheks.gov/ches/index.html>.

Highlights

The collection process for prenatal care data has changed. Please see the Technical Notes.

Of the 36,832 Kansas resident live births reporting prenatal care in 2006, 78.4 percent received adequate or better prenatal care, including 33.1 percent with adequate-plus care; 21.6 percent received less than adequate prenatal care, including 14.6 percent with inadequate care.

Among mothers whose prenatal care utilization was classified as inadequate (5,363), the vast majority (5,084) were due to late initiation of care. In other words, only a minority of women (279) who initiated their care within the first four months of care received inadequate care.

Comanche county had the highest percentage of mothers with adequate or better prenatal care (92.3) followed by Decatur (88.9) and Mitchell counties (88.4). Cheyenne county had the lowest percentage of adequate or better prenatal care (37.5), followed by Clark (55.0) and Hamilton (55.8) counties.

The county with the highest percentage of mothers with inadequate care was Morton (35.0) followed by Hamilton (30.2) and Seward (30.2). Comanche, Decatur and Logan counties had the lowest percentage of inadequate care (0.0), followed by Mitchell (3.3) and Smith (3.5) counties.

Among mothers of low birth weight infants, nearly eighty (79.4) percent received adequate or better care, while 16.5 percent exhibited inadequate care use.

The proportion of mothers who received adequate or better prenatal care was highest among White Non-Hispanic (83.2 percent), followed by Asian/Pacific Islander Non-Hispanic (80.6 percent) and Other Non-Hispanic (74.8 percent). The population group with the lowest percent was Hispanic (61.5).

The proportion of mothers with inadequate care among Black Non-Hispanic women (23.8 percent), Native American Non-Hispanic women (23.9 percent) and Hispanic women (28.5 percent) were more than twice that for White Non-Hispanic (10.7 percent) women.

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Adolescent and Teenage Pregnancy Report Kansas, 2006

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Introduction

Maintaining and improving family health is an essential component of the public health mission of the Kansas Department of Health and Environment. Facilitating healthy pregnancies and positive outcomes pays dividends to Kansas society in the form of reduced maternal and infant mortality and fit children capable of learning and growing into productive members of that society. It is in this role the department, through the Division of Health's Center for Health and Environmental Statistics (CHES), provides this report so progress in reducing adolescent and teen pregnancy can be monitored.

While the department provides a series of tables on teen and adolescent pregnancies in the *Kansas Annual Summary of Vital Statistics*, this report builds on that information by combining additional analytical tables into one resource. Adolescent and teen pregnancies are evaluated in a number of different ways. Thus, in this report the reader will see a number of different combinations of age-groups, i.e., 10-14, 15-17, 18-19, and 10-19, used in the tabulations. This is not meant to confuse the reader but to provide the diverse audience of legislators, policy makers, media, program administrations and the public who closely monitor pregnancy issues with a data summary that meets their needs.

For purposes of this report adolescents and teens refer to persons who range in age from 10 to 19. Pregnancies are defined as stillbirths, abortions, and live births. Data for this report are obtained through analysis of reports and certificates registered with the CHES Office of Vital Statistics. Readers will be able to review both the frequency of adolescent and teen pregnancies as well as the population-based rate. Using the population-based rates, comparisons among counties or with the state are possible. Multi-year rates are prepared for those instances where low counts may inordinately influence a single-year rate.

Several of these tables are taken from the *2006 Annual Summary of Vital Statistics*. Both products can be found at <http://www.kdheks.gov/ches/index.html>. Other tabulations of pregnancy data are possible at the Kansas Information for Communities (KIC) Website: <http://kic.kdhe.state.ks.us/kic/preg.html>.

Highlights

Teenage females (10-19) accounted for eleven percent (11.1) of the pregnancies (46,974) in 2006. Eighty percent (80.0) of the teenage pregnancies resulted in a live birth (4,154), nineteen percent in abortion (1,016) and the rest in stillbirths (22).

The pregnancy rate for females ages 10-19 was 27.1 per 1,000 women in 2006, up 1.5 percent from 2005 (26.7).

The rates for teenage subgroups 10-14 (0.9) and 15-19 (52.2) each rose 12.5 and 2.8 percent respectively between 2005 and 2006. The rate for teenagers, 10-17 years, remained the same (10.4).

Despite a slight increase in the number and rate of teenage pregnancies in 2005 and 2006, there continues to be a general downward trend. Teenage pregnancy rates (10-19) dropped 15.0 percent overall during the past two decades 1987-2006.

Of the 5,192 Kansas females age 10-19 who were pregnant in 2006, most (98.4 percent) were between 15 and 19 years of age. The Kansas teenage pregnancy rates for females 15-19 years of age decreased 16.6 percent between 1987 and 2006. Teen pregnancy rates for females ages 10-17 decreased 33.3 percent during this same time frame.

In 2006, densely-settled rural counties had the highest pregnancy rates for 10-19 year old females, followed by urban and semi-urban.

The five-year 2002-2006 teen pregnancy rate for Kansas resident females 10-19 years of age was 26.9. Thirty-three of the state's 105 counties have five-year teen pregnancy rates greater than the state rate. The lowest five-year rate in the state was in Rawlins County with 4.4 pregnancies per 1,000 females 10-19 years of age. The highest rate was in Geary County with 53.3 per 1,000 females 10-19 years of age.

For more information, contact Karen Sommer at ksommer@kdhe.state.ks.us or KDHE's Office of Health Assessment with any related questions.

Racial Disparities in Preventable Hospitalizations for Low Birth Weight

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In the United States, the incidence of low birth weight (LBW), less than 5 pounds 8 ounces (2,500 grams), has risen steadily from 6.7 percent in 1984 to the highest level recorded in the past 3 decade. In 2005, the U.S. LBW was 8.2 percent, which increased from 8.1 percent the previous year.

In Kansas the LBW percentage increased from 7.0 in 2001 to 7.2 percent in 2006. Some of the risk factors that impact the incidence of LBW are smoking by pregnant mothers, race/ethnicity, socioeconomic status, marital status, maternal age, medical conditions, and prenatal substance use, among others. Although the rise in multiple births has impacted the LBW gradient, LBW outcomes also continue to increase in single births. The purpose of this article is to summarize U.S. and Kansas trends regarding LBW and disparities in preventable hospitalization.

Kansas community hospital discharge data 2003-2006 from the Kansas Hospital Association (KHA) are used to compare preventable hospitalizations among Kansas racial/ethnic or population groups. Data for 2000-2006 are used to compare Kansas and national trends. Population groups include white non-Hispanic, black non-Hispanic, Asian/Native Hawaiian or Other Pacific Islander (NHOPI) non-Hispanic, American Indian/Alaskan Native (AI/AN) non-Hispanic, and Hispanic. Statistics for the category Other/Unknown consisting of multi-racial and individuals of unknown racial and ethnic origin, are not included due to data reporting issues and statistical unreliability.

Low Birth Weight

The Agency for Healthcare Research and Quality (AHRQ) indicates that adequate primary and outpatient care for selected conditions like LBW can often prevent more serious disease complications or circumvent hospitalization. Since hospitalization is the most serious and expensive part of health care treatment, reducing otherwise preventable and possibly unnecessary hospitalization is critical to cost reduction and avoidance. In both the U.S. and Kansas, LBW percentages are higher among black non-Hispanic infants than among other population segments. In 2006, the US and Kansas LBW rates were much higher among black non-Hispanic infants (14.0 percent and 13.5 percent, respectively) than among infants of other racial/ethnic groups. Kansas percents were slightly lower than LBW percents reported nationally.

Preventable Hospitalization

In both the US and Kansas, preventable hospitalization rates due to LBW have risen. Racial differences in hospitalization rates may signify disparities in the quality of ambulatory care as well as disparities in access to timely and effective primary care for certain health conditions. Among Kansans, between 2003 and 2006, black non-Hispanics had the highest preventable hospitalization rates for LBW. They were nearly twice as likely as white non-Hispanics to experience a preventable hospitalization due to LBW. On the other hand, Asian/NHOPI non-Hispanics and Hispanics had lower preventable hospitalization rates when compared to white non-Hispanics.

Discussion

LBW not only affects the baby and the mother but society as a whole. There are many risk factors that impact LBW. Research has identified a number of social, medical, and behavioral risk factors that affect the incidence of LBW and some risk factors may contribute directly to racial disparities in LBW.

Attempts have been made to address identified risk factors like reducing smoking rates in pregnant mothers through counseling and/or pharmacotherapy; monitoring and treating chronic maternal diseases like hypertension, diabetes, and heart disease; and attending to nutritional issues, among others. However, further study is warranted and may offer effective strategies for reducing LBW and helping to narrow racial disparities in LBW. For the most part, research on contributing risk factors is in its infancy.

To view the full report in the Kansas Health Statistics Report, August 2007, please visit www.kdheks.gov/ches/khsnews/khsr.html. For more information, contact Rachel Lindbloom at rlindblo@kdhe.state.ks.us.

Perinatal Deaths Using Linked Death and Birth Files Kansas, 2005 and 2006

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Infant mortality, a measure used to compare the health and well-being of populations across and within countries is important both nationally and in Kansas. This measure can be drilled down to several sub-components:

- ❑ Perinatal deaths, which include fetal deaths and infant deaths less than 7 days,
- ❑ Neonatal deaths, which include infant deaths less than 28 days and
- ❑ Post-neonatal deaths, which include infant deaths from 28 days to 364 days.

This article looks at perinatal deaths. Perinatal deaths are an important sub-component of infant deaths since it is difficult at times to distinguish between an infant death that occurs near the time of birth and a late fetal death. Nationally, the perinatal death rate (perinatal period II definition) includes fetal deaths 20 weeks or more and hebdomadal deaths (infant deaths less than 7 days of age). Nationally, in 2004, the most recent year with statistics, the perinatal death rate was 10.7/1,000 hebdomadal deaths plus stillbirths. This rate according to the National Center of Health Statistics (NCHS) has declined by 18 percent from 1990.

In Kansas, the definition of perinatal deaths is loosely comparable but not quite the same. Kansas collects data on “Perinatal period III” deaths, which include hebdomadal deaths plus stillbirths where the fetus weighs over 350 grams.

In Kansas, in 2006, the perinatal death rate for Kansas residents was 8.0/1,000 live births plus stillbirths, a decrease of 28.6 percent from 1987.

Public health caregivers need to know who is at risk for negative birth outcomes and what are the contributing factors. The linked birth and death file provides data to gain a better understanding of these issues. Additionally, starting in 2005, Kansas collected more extensive risk-related data with the revised birth certificate.

The linked birth and infant death data set (death cohort) provides important data such as:

- ❑ age at death, and underlying cause of death,
- ❑ race and Hispanic origin of the mother,
- ❑ birthweight, period of gestation,
- ❑ plurality,
- ❑ maternal age,
- ❑ socio-economic factors such as mother’s education and payer of the delivery and
- ❑ medical risk factors of both mother and infant at the time of delivery.

To view the full report in the Kansas Health Statistics Report, August 2007, please visit www.kdheks.gov/ches/khsnews/khsr.html. For more information, contact Carol Moyer at cmoyer@kdhe.state.ks.us.

Childcare-related Mortality in Kansas

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In 2006, 293 infants and 50 children aged 1-4 died in Kansas. For infants, the cause of death was due mostly to conditions originating in the perinatal period and congenital defects (67.2%). For the older children, external causes were responsible for almost half the deaths (44.7%).

Concerned about an increase in the number of deaths to infants and children in childcare settings, the KDHE Bureau of Childcare and Health Facilities (BCCHF) implemented a tracking system to gather information about childcare-related deaths. A childcare-related death was defined as a death to an individual, age 0-17, from any cause wherein the child was in the care of a regulated provider at the time of death or at the initiation of the events that resulted in the death, regardless of the place of death.

The Center for Health and Environmental Statistics, through the Office of Vital Statistics, provides death certificate information to the tracking system. As a result, BCCHF staff identified 14 childcare-related deaths in 2007.

Case information collected about the deaths revealed that safe sleeping practices were not always followed. Three out of six infants placed on their backs were found unresponsive on their stomachs, two infants were found on their backs as they were initially placed, and one was found wedged (in or against bedding); one out of three infants placed on his or her side was found on his or her stomach; the unknown placement was found wedged. Infants were most often found on their stomachs, which is the found position most consistent with unresponsive infants.

Experts can't predict Sudden Infant Death Syndrome (SIDS) babies, and SIDS by definition can't be prevented. Caregivers can reduce the risks. Studies have shown that placing an infant on his or her back for sleeping reduces SIDS risk. BCCHF requires regulated providers to nap infants in approved cribs or playpens. There are no requirements presently that infants be napped on their backs.

Overall in Kansas, SIDS was responsible for 53 infant deaths in 2006. The recent trend has been an increase in SIDS deaths. As a result, KDHE is planning a media campaign to promote safe infant and childcare practices, including a focus on safe infant sleeping practices.

To view the full report in the Kansas Health Statistics Report, August 2007, please visit www.kdheks.gov/ches/khsnews/khsr.html. For more information, contact Rachel Berroth at rberroth@kdhe.state.ks.us or Greg Crawford at gcrawfor@kdhe.state.ks.us.

Births to Foreign-Born Mothers

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The percentage of births to foreign-born mothers is increasing across the country. Nationally, this percentage has increased steadily from 15.6 percent of all births in 1990 to 24.2 percent of all births in 2004. Kansas ranked 23rd among states, with 14 percent of births to foreign-born mothers in 2004. This according to the online report *The Right Start for America's Newborns: City and State Trends* (<http://www.aecf.org/kidscount/sld.rightstart.jsp>), prepared by the Annie E. Casey Foundation, based on data from the National Center for Health Statistics.

In 2006, Kansas birth certificate data showed that 14.4 percent (6,055) of births occurring in Kansas (41,918) were to foreign-born mothers. On the birth certificate a woman is identified as a foreign-born mother if she was born outside the 50 states, the District of Columbia, or U.S. territories. Over half (57.4%) of all foreign women giving birth in Kansas in 2006 were born in Mexico while around four percent each came from Vietnam, India, and Germany (Table 9). The highest concentrations of births to foreign-born Mexican mothers were in Wyandotte (26.6%), Sedgwick (23.1%), Seward (9.4%), Ford (8.3%), and Finney (7.7%) counties.

Maternal and newborn characteristics varied by mother's nativity for 2006 Kansas occurrence births:

- ❑ Overall, native-born women were more likely than foreign born women to deliver preterm (9.5% versus 7.6%) or deliver an infant with low birth weight (7.3% versus 5.8%).
- ❑ Native-born women were more likely than foreign-born women to be teenagers when they gave birth (10.3% versus 8.3%).
- ❑ In general, native-born mothers had smaller families, higher levels of educational attainment and better prenatal care.
- ❑ The percentage of foreign-born mothers who had not completed high school was nearly three (2.9) times higher than for native-born mothers.
- ❑ The percentage of foreign-born mothers who received no prenatal care was over 2 (2.4) times higher.
- ❑ Overall, the percentage of babies born to unmarried mothers was nearly identical (34.8% and 34.1%) for both groups.

To view the full report in the Kansas Health Statistics Report, August 2007, please visit www.kdheks.gov/ches/khsnews/khsr.html. For more information, contact Karen Sommer at ksommer@kdhe.state.ks.us.

Trends in Tuberous Sclerosis Deaths in the United States, 1983-1997

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Background: Tuberous sclerosis complex (TSC) is an autosomal dominant disorder associated with mutations in two genes, TSC1 and TSC2. The condition is associated with life-threatening renal, cardiac, central nervous system and pulmonary complications. Clinical studies have suggested decreased survival rates overall relative to the general population.

Objective: This population-based study examined national mortality trends among individuals with a diagnosis of TSC coded on their death certificates from 1983 through 1997.

Methods: We analyzed the Multiple-Cause Mortality Files compiled by the Centers for Disease Control and Prevention's National Center for Health Statistics. All cases that contained the unique TSC code (759.5) anywhere in the record were selected. Age-adjusted mortality rates were computed by the direct method using the 2000 U.S. standard population. Joinpoint regression was used to identify trends in TSC-associated mortality rates over time.

Results: Of the 32,674,367 decedents in the study period, 688 had TSC coded on their death certificates. Of these, 382 (55.5%) had TSC coded as the underlying cause of death. The age group with the highest proportion per 100,000 deaths involving TSC was ages 10-14 years (48.9) followed by ages 5-9 years (39.9). The median age of death increased from 20.5 years in 1983 to 33 in 1997, but with age-adjustment, no significant trend was detected in mortality rates by sex or race over the study period ($p>0.05$). Although mortality rates among infants were higher in the 1995-1997 compared to 1983-1985, the changes in rates were not statistically significant ($p>0.05$) for any of the four age groups (<1, 1-19, 20-34, and 35+). Common comorbid conditions mentioned on death certificates included convulsions (24%) and cardiac arrests (19%).

Conclusions: The median age of death among decedents with a coded diagnosis of TSC increased from 1983 to 1997, but no significant trend was detected in age-adjusted mortality rates among TSC-associated deaths during the study period. Further analyses will be necessary to examine hypotheses such as the role of temporal changes in coding or clinical recognition of pediatric TSC, and more recent trends in mortality rates.

Public health implications: Understanding the changes in trends and patterns of TSC-associated deaths and comorbid conditions will provide a basis for improved surveillance and monitoring and facilitate lifelong follow-up and treatment.

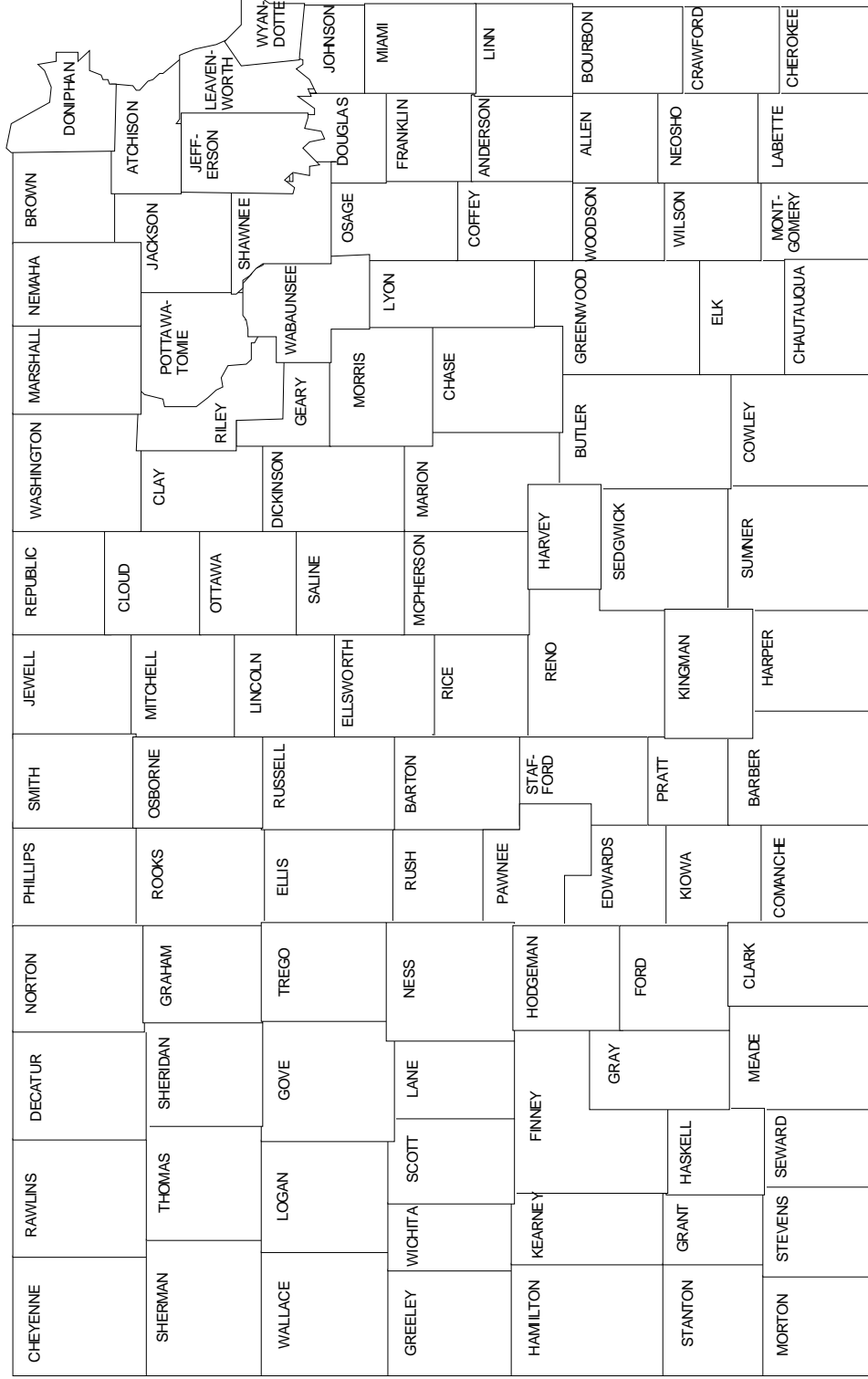
Acknowledgments: The Heartland Regional Genetics and Newborn Screening Collaborative provided a scholarship to attend the Sarah Lawrence Public Health Genetics/Genomics Certificate program. This capstone project was a collaborative work with the Centers for Disease Control and Prevention.

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SECTION VI

Appendices

Map of Kansas



COUNTY ABBREVIATIONS

AL	Allen	GL	Greeley	OB	Osborne
AN	Anderson	GW	Greenwood	OT	Ottawa
AT	Atchison	HM	Hamilton	PN	Pawnee
BA	Barber	HP	Harper	PL	Phillips
BT	Barton	HV	Harvey	PT	Pottawatomie
BB	Bourbon	HS	Haskell	PR	Pratt
BR	Brown	HG	Hodgeman	RA	Rawlins
BU	Butler	JA	Jackson	RN	Reno
CS	Chase	JF	Jefferson	RP	Republic
CQ	Chataqua	JW	Jewell	RC	Rice
CK	Cherokee	JO	Johnson	RL	Riley
CN	Cheyenne	KE	Kearny	RO	Rooks
CA	Clark	KM	Kingman	RH	Rush
CY	Clay	KW	Kiowa	RS	Russell
CD	Cloud	LB	Labette	SA	Saline
CF	Coffey	LE	Lane	SC	Scott
CM	Comanche	LV	Leavenworth	SG	Sedgwick
CL	Cowley	LC	Lincoln	SW	Seward
CR	Crawford	LN	Linn	SN	Shawnee
DC	Decatur	LG	Logan	SD	Sheridan
DK	Dickinson	LY	Lyon	SH	Sherman
DP	Doniphan	MN	Marion	SM	Smith
DG	Douglas	MS	Marshall	SF	Stafford
ED	Edwards	MP	McPherson	ST	Stanton
EK	Elk	ME	Meade	SV	Stevens
EL	Ellis	MI	Miami	SU	Sumner
EW	Ellsworth	MC	Mitchell	TH	Thomas
FI	Finney	MG	Montgomery	TR	Trego
FO	Ford	MR	Morris	WB	Wabaunsee
FR	Franklin	MT	Morton	WA	Wallace
GE	Geary	NM	Nemaha	WS	Washington
GO	Gove	NO	Neosho	WH	Wichita
GH	Graham	NS	Ness	WL	Wilson
GT	Grant	NT	Norton	WO	Woodson
GY	Gray	OS	Osage	WY	Wyandotte

TECHNICAL NOTES

In this report, data analysis and display were based on suggestions of the Maternal and Child Health Services, Health Resources and Services Administration. Table 1 includes the guidelines for measures with small sample sizes used in this document.

TABLE 1

Number of Events	Calculate Rate/ Percent	Method of Analysis
At least 20 events in the numerator and /or at least 50 events in the denominator.	Yes	Used calculated rate or percent
Fewer than 20 events (numerator) and/or 50 events in the denominator.	Yes	Combine 3-5 years so there will be at least 10 in the numerator and 50 in the denominator

Procedures: Calculate rates (at least 20 events in one year)

Example: 25 infant deaths and 860 live births

calculate rate:

$$\frac{25 \text{ infant deaths}}{860 \text{ live births}} \times 1,000 = 29.1 \text{ (rate)}$$

Mortality Data

Death data are classified according to the World Health Organization's International Classification of Diseases (ICD). The ICD – 10 classification system uses an alpha-numeric coding system denoting both the nature of injury and external causes.

Category	ICD-10 Coding
Vital Statistics - Death	
Injury	U01-U03, V01-Y36, Y85-Y87, Y89
Suicide	U03, X60-X84, Y870
Homicide	U01-U02, X85-Y09, Y871
Unintentional Injury	V01-X59, Y85-Y86

Weighting Procedure

Weighting is a process by which the survey data such as the Behavioral Risk Factor Surveillance System is adjusted to account for unequal selection probability and response bias and to more accurately represent the population from which the sample was drawn. The responses of each person interviewed are assigned a weight which accounts for the density stratum, the number of telephone numbers in the household, the number of adults in the household, and the demographic distribution of the sample. Alterations in the weighting formulas are made to arrive at estimates for prevalence of households and among children in specific age groups.

2005 Revisions to Certificates

Beginning with the reporting of 2005 data, Kansas implemented the 2003 revision of the U.S. standard certificates and reports. Please note that not all states have implemented the use of the new certificate format. Therefore, some information routinely collected on Kansas occurrence events may not be provided on births and deaths that involve Kansas residents who had events in another state.

While most data items on the certificates are comparable to past years, certain items have changed considerably. These changes can affect comparability with previous years data. Three data elements addressed in this report are: prenatal care visits, smoking, and race-ethnicity.

Prenatal care visits

In previous years, the mother or prenatal care provider reported the month of pregnancy in which the mother began prenatal care. As of 2005, this item was replaced by the exact dates of first and last prenatal visit. Therefore, the month prenatal care began is now calculated from the last normal menses date and the date of first prenatal care visit. Unfortunately, because exact dates are harder to get, the month prenatal care began now has high numbers of missing data. The missing data have been removed from totals when calculating percentages.

As a result of changes in reporting, levels of prenatal care utilization based on the new revised data are lower than those based on data from previous certificates. For example, 2004 data for Kansas indicates that 86.5% of residents began care in the first trimester compared to 75.0% based on the 2006 revised data. The Adequacy of Prenatal Care Utilization Index (APNCU) showed a small increase in the proportion of women receiving less than adequate care between 2004 (18.7 %) and 2006 (21.6%). Much of the difference between 2004 and 2006 is related to changes in reporting and not to changes in prenatal care utilization. Accordingly, prenatal care data in this report is not directly comparable to data collected from previous certificates.

Smoking

Adoption of the revised birth certificate produced substantive changes in the wording of the questions on tobacco use. The old certificate listed a tobacco use checkbox and a literal field for the number of cigarettes in the medical risk factor section. Smoking information was limited to whether the mother smoked anytime during the pregnancy. The new certificate asks about cigarette smoking in an item separate from medical risk factors. New fields address smoking behavior pre-pregnancy and during each trimester of the pregnancy. New data are not fully comparable with pre-2005 data. However, the new information will enable supplementary

research into changes in smoking patterns before and during the pregnancy. It remains uncertain whether the changes will address what has been chronic underreporting of smoking on birth certificates.

Race-Ethnicity

The revised certificate contains significant changes in the way self-reported race and ethnicity is collected. The race item was revised to allow the reporting of multiple races and can capture up to 15 categories and eight literal entries. In addition, Hispanic origin is now collected as a separate question from ancestry. These changes were implemented to provide a better picture of the nation's variation in race and Hispanic origin. The expanded racial and origin categories are compliant with the provisions of the Statistical Policy Directive No. 15, Race and Ethnic Standards for Federal Statistics and Administrative Reporting, issued by the Office of Management and Budget (OMB) in 1997.

For this report, race and Hispanic origin categories are combined. Self-reported single race data are utilized for White Non-Hispanic, Black Non-Hispanic, Native American Non-Hispanic, Asian/Pacific Islander Non-Hispanic, and Other Non-Hispanic. If more than one racial category is checked, the person's race is classified as "Multiple " and is collapsed into the Other Non-Hispanic category. Data shown for Hispanic persons include all persons of Hispanic origin of any race. These particular groupings are categories that reflect the cultural and ethnic identities of subgroups of the population commonly addressed in the public health field and on which health disparities can be measured.

For more information, please visit www.kdheks.gov/ches/download/Prelim_Findings_2005a.pdf, www.kdheks.gov/ches/download/Disparity_Eval_2008.pdf, and www.kdheks.gov/hci/as/2006/AS2006.html.

Glossary

Adequacy of Prenatal Care Utilization (APNCU)

Index: An assessment of the adequacy of prenatal care measured by the APNCU Index (often referred to as the Kotelchuck Index), a composite measure based on gestational age of the newborn, the trimester prenatal care began, and the number of prenatal visits made.

African American/"Black" (2000): The 2000 Census category "Black or African American" describes a person having origins in any of the Black racial groups of Africa. It includes people who indicate their race as "Black, African Am., or Negro," or provide written entries such as African American, Afro American, Kenyan, Nigerian, or Haitian.

Age-Adjusted Death Rate: A calculation by which the age composition of a population is defined as constant so that differences in age composition can be eliminated from the analysis.

American Indian or Alaska Native (2000): The 2000 Census category "American Indian or Alaska Native" describes a person having origins in any of the original peoples of North and South America (including Central America) and who maintain tribal affiliation or community attachment. It includes people who classified themselves as described below.

American Indian. This category includes people who indicated their race as "American Indian," entered the name of an Indian tribe, or reported such entries as Canadian Indian, French American Indian, or Spanish American Indian.

American Indian tribe. Respondents who identified themselves as American Indian were asked to report their enrolled or principal tribe. Therefore, tribal data in tabulations reflect the written entries reported on the questionnaires. Some of the entries (for example, Iroquois, Sioux, Colorado River, and Flathead) represent nations or reservations. The information on tribe is based on self-identification and therefore does not reflect any designation of federally or state-recognized tribe.

Information on American Indian tribes is presented in summary files. The information for Census 2000 is derived from the American Indian Tribal Classification List for the 1990 census that was updated based on a December 1997, Federal Register Notice, entitled "*Indian Entities Recognized and Eligible to Receive Service From the United States Bureau of Indian Affairs*," Department of the Interior, Bureau of Indian Affairs, issued by the Office of Management and Budget.

Alaska Native. This category includes written responses of Eskimos, Aleuts, and Alaska Indians as well as entries such as Arctic Slope, Inupiat, Yupik, Alutiiq, Egegik, and Pribilovian. The Alaska tribes are the Alaskan Athabascan, Tlingit, and Haida. The information for Census 2000 is based on the American Indian Tribal Classification List for the 1990 census, which was expanded to list the individual Alaska Native Villages when provided as a written response for race.

Apgar score: A summary measure of the condition of the infant based on heart rate, respiratory effort, muscle tone, reflex irritability, and color. Each factor is given a score of 0, 1, or 2; the sum of these five values is the Apgar score, ranging from 0 to 10.

Asian (2000): The 2000 Census category "Asian" describes a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. It includes "Asian Indian," "Chinese," "Filipino," "Korean," "Japanese," "Vietnamese," and "Other Asian."

Asian Indian. This category includes people who indicated their race as "Asian Indian" or identified themselves as Bengalese, Bharat, Dravidian, East Indian, or Goanese.

Chinese. This category includes people who indicate their race as "Chinese" who identify themselves as Cantonese, Chinese American, or Taiwanese.

Filipino. This category includes people who

indicate their race as “Filipino” or who report entries such as Philipino, Philippine, or Filipino American.

Japanese. This category includes people who indicate their race as “Japanese” or who report entries such as Nipponese or Japanese American.

Korean. This category includes people who indicate their race as “Korean” or who provide a response of Korean American.

Vietnamese. This category includes people who indicate their race as “Vietnamese” or who provide a response of Vietnamese American.

Cambodian. This category includes people who provide a response such as Cambodian or Cambodia.

Hmong. This category includes people who provide a response such as Hmong, Laohmong, or Mong.

Laotian. This category includes people who provide a response such as Laotian, Laos, or Lao.

Thai. This category includes people who provide a response such as Thai, Thailand, or Siamese.

Other Asian. This category includes people who provide a response of Bangladeshi; Bhutanese; Burmese; Indochinese; Indonesian; Iwo Jiman; Madagascar; Malaysian; Maldivian; Nepalese; Okinawan; Pakistani; Singaporean; Sri Lankan; or Other Asian, specified and Other Asian, not specified.

See Pacific Islander.

Behavioral Risk Factor Surveillance Survey

(BRFSS): The world’s largest telephone survey tracks health risks in the United States. Information from the survey is used to improve the health of the American people. Coordinated by the Centers for Disease Control and Prevention (CDC) and conducted by State health departments.

Kansas BRFSS: The Kansas BRFSS adapted from the National BRFSS. This surveillance system is based on a research design developed by the CDC and used in all 50 states, the District of Columbia, and three U.S. territories.

Birth rate: Measures the number of births that occur to 1,000 adults of reproductive age in any given

year. Birth rates are based on information collected from birth certificates, combined with population estimates generated by the U.S. Bureau of the Census.

Birth weight: The weight of the fetus or infant at the time of delivery.

Body Mass Index (BMI): A measure of weight relative to height. A BMI of less than 25 is considered ideal or healthy; a BMI of 25-29 is considered overweight; and a BMI greater than 30 is considered to be indicative of obesity. BMI is calculated by dividing an individual’s weight in kilograms by the individual’s height in meters squared.

CDC: Centers for Disease Control and Prevention, based in Atlanta, GA.

Community: Any set of persons within the society that differs from other sets due to demographic, economic or social characteristics such as age, sex, education level, race, religion, income level, lifestyle, beliefs, etc.

Congenital anomalies: Defects existing at the usually before birth regardless of causation.

Crude death rate: The number of deaths per 1,000 population, calculated by Number of Deaths divided by Population of the Area, multiplied by 1,000. See Mortality.

Death rate: A death rate is a ratio between mortality and population; the number of deaths per specific number of people. This is the most widely used measure to determine the overall health of a community. Death rates are usually computed per 100,000 population. Rates allow meaningful comparisons between groups of unequal size.

Disparities: Differences (in health) among individuals and/or groups in a population.

Environmental factors: Qualities or contaminants of living and working surroundings that contribute to health and health care disparities such as poor air qual-

ity, crime, contaminated water, and exposure to toxic chemicals. Environmental factors in combination with individual, social and health system factors lead to health and healthcare disparities.

Ethnicity: The characteristic of a group of people that share a common and distinctive national, religious, linguistic or cultural heritage. A quality or affiliation resulting from similar national, religious, linguistic, or cultural heritage.

Family: As defined by the U.S. Census Bureau, a family includes a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption. All people in a household who are related to the householder are regarded as members of his or her family. A household can contain only one family for purposes of census tabulations. Not all households contain families since a household may be a group of unrelated people or one person living alone.

Fertility rate: The number of live births per 1,000 females 15-44 years of age. Calculated by number of live births divided by female population ages 15-44 multiplied by 1,000.

Health: A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Health care organization: Any public or private institution involved in any aspect of delivering health care services.

Health maintenance organization (HMO): A type of managed care organization that provides comprehensive medical care for a predetermined annual fee per enrollee.

Healthy People 2010: Healthy People 2010 is a nationwide health promotion and disease prevention initiative that is committed to improving the health of all people in the United States during the first decade of the 21st century. Healthy People 2010 is designed to achieve two overarching goals: to increase quality and years of healthy life and to eliminate health dis-

parities in the United States.

Hebdomadal death: The death of a live-born infant which occurs prior to the seventh day of life.

Hispanic/"Hispanic or Latino" (2000): The data on the Hispanic or Latino population were derived from answers to a question that was asked of all people. The terms "Spanish," "Hispanic origin," and "Latino" are used interchangeably. Some respondents identify with all three terms while others may identify with only one of these three specific terms. Hispanics or Latinos who identify with the terms "Spanish," "Hispanic," or "Latino" are those who classify themselves in one of the specific Spanish, Hispanic, or Latino categories listed on the questionnaire ("Mexican," "Puerto Rican," or "Cuban") as well as those who indicate that they are "other Spanish/Hispanic/Latino." People who do not identify with one of the specific origins listed on the questionnaire but indicate that they are "other Spanish, Hispanic, or Latino" are those whose origins are from Spain, the Spanish-speaking countries of Central or South America, the Dominican Republic, or people identifying themselves generally as Spanish, Spanish-American, Hispanic, Hispano, Latino, and so on. All write-in responses to the "other Spanish/Hispanic/Latino" category were coded.

If an individual could not provide a Hispanic origin response, their origin was assigned using specific rules of precedence of household relationship. For example, if origin was missing for a natural-born daughter in the household, then either the origin of the householder, another natural-born child, or spouse of the householder was assigned. If Hispanic origin was not reported for anyone in the household, the Hispanic origin of a householder in a previously processed household with the same race was assigned. This procedure is similar to those used in 1990, except for Census 2000 race and Spanish surnames were used to assist in assigning an origin.

Household: As defined by the U.S. Census Bureau, a household includes all of the people who occupy housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room occupied (or if vacant, intended for occupancy)

as separate living quarters. Separate living quarters are those in which the occupants live separately from any other people in the building and that have direct access from the outside of the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living quarters.

ICD-10 Code: The cause-identifying number classified in the 10th Revision of the international classification of Diseases implemented by National Center for Health Statistics (NCHS) for deaths in 1999.

ICD-9 Code: International classification of Diseases, 9th Revision (1979-1998).

Incidence: Incidence is an estimate of the number of new cases of disease that develop in a population in a specified time period, usually one year. Incidence is often used as an indicator of the need for preventive measures, or to evaluate the effectiveness of existing programs. How often new cases of a health problem occur in a population.

Indian (American): See American Indian.

Infant death rate: The number of infant deaths per 1,000 live births, calculated as number of infant deaths divided by number of live births, multiplied by 1,000.

Infant death: The death of a live-born infant which occurs within the first year of life.

Interpreter: A person who not only translates from one language to another but assists in cross-cultural understanding between providers and patients.

Live birth: The complete expulsion or extraction of a product of human conception from its mother, irrespective of the duration of pregnancy, that, after such expulsion or extraction, shows any evidence of life such as breathing, heartbeat, pulsation of the umbilical cord, or voluntary muscle movement, whether or not the umbilical cord has been cut or the placenta attached.

Low birth weight: Weight of a fetus or infant at delivery which is under 2,500 grams (less than five pounds, 8 ounces).

Maternal death: Deaths attributable to delivery or the complications of pregnancy, childbirth or the immediate time period following childbirth.

Maternal death rate: The number of maternal deaths per 100,000 live births.

Medicaid: A state and federal program which funds and provides specific and approved health care and related services for individuals meeting certain eligibility conditions.

Medicare: A federal health insurance program designed to provide health care for the elderly and the disabled.

Minority (2000): 2000 minority population includes all persons who are not Non-Hispanic White Alone (e.g., White Hispanics would be a minority population as would persons who classified themselves as both White and American Indian).

Morbidity: A term used to describe disease, sickness or illness, as a departure from normal physiological and psychological conditions. It is normally expressed as a morbidity rate. Morbidity rates give the closest frame of the quality of life and health status in a given population.

Mortality: A term used to describe death. It is normally expressed as a rate, expressing the proportion of a particular population who die of one or more diseases or of all causes during a specified unit of time, usually a year. It is also the probability of dying within a specified time period.

Neonatal death: The death of a live-born infant which occurs prior to the twenty-eighth day of life.

Neonatal death rate: The number of neonatal deaths per 1,000 live births calculated thus, number of neonatal deaths divided by number of live births multiplied by 1,000.

Occurrence data: Vital statistics compiled on the basis of where the vital event happened.

Other race/”Some other race” (2000): This category includes all other responses not included in the “White,” “Black or African American,” “American Indian or Alaska Native,” “Asian,” and “Native Hawaiian or Other Pacific Islander” race categories described above. Respondents providing write-in entries such as multiracial, mixed, interracial, or a Hispanic/Latino group (for example, Mexican, Puerto Rican, or Cuban) in the “Some other race” write-in space are included in this category.

Pacific Islander/”Native Hawaiian or Other Pacific Islander” (2000): The 2000 Census category “Native Hawaiian or Other Pacific Islander” describes a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. It includes people who indicate their race as “Native Hawaiian,” “Guamanian or Chamorro,” “Samoan,” and “Other Pacific Islander.” (In this document “Asian” and “Pacific Islander” data are combined into one category.)

Native Hawaiian. This category includes people who indicate their race as “Native Hawaiian” or who identify themselves as “Part Hawaiian” or “Hawaiian.”

Guamanian or Chamorro. This category includes people who indicate their race as such, including written entries of Guam or Chamorro.

Samoan. This category includes people who indicate their race as Samoan or who identify themselves as American Samoan or Western Samoan.

Other Pacific Islander. This category includes people who provide a write-in response of a Pacific Islander group such as Carolinian; Chuukese (Trukese); Fijian; Kosraean; Melanesian; Micronesia; Northern Mariana Islander; Palauan; Papua New Guinean; Pohnpeian; Polynesian; Solomon Islander; Thitian; Tokelauan; Tongan; Yapese; or Other Pacific Islander, specified and Other Pacific Islander, not specified.

In this report “Asian” and “Pacific Islander” data are combined into one category. See also Asian.

Patients/consumers: Individuals, including accompanying family members, guardians, or companions, seeking physical or mental health care services, or other health-related services.

Perinatal death: Fetal deaths plus hebdomadal deaths.

Population: All people, male and female, child and adult, living in a given geographic area.

Postneonatal death: Death of a person ages between 28 days and one year.

Postneonatal death rate: The number of post neonatal deaths per 1,000 live births, calculated as number of Postneonatal deaths divided by the number of live births, multiplied by 1,000.

Prenatal care: Pregnancy-related health care services provided to a woman between conception and delivery.

Prevalence: Prevalence is an estimate of how many people have a specific condition or disease at a given point in time. This number is useful in assessing the level of medical and social care needed for current cases.

Race (2000): The data on race were derived from answers to the question on race that was asked of all people. The concept of race, as used by the Census Bureau, reflects self-identification by people according to the race or races with which they most closely identify. These categories are socio-political constructs and should not be interpreted as being scientific or anthropological in nature. Furthermore, the race categories include both racial and national-origin groups.

The racial classifications used by the Census Bureau adhere to the October 30, 1997, Federal Register Notice entitled, “Revisions to the Standards for the Classification of Federal data on Race and Ethnicity” issued by the Office of Management and Budget (OMB). These guidelines reflect “the increasing diversity of our Nation’s population, stemming from growth in interracial marriages and immigration.”

The OMB standards govern the categories used to collect and present federal data on race and ethnicity. The OMB requires five minimum categories (White, Black or African American, American Indian or Alaska Native, Asian and Native Hawaiian or Other Pacific Islander) for race. A sixth category, “Some other race,” was added with OMB approval. In addition to the five race groups, the OMB also states that respondents should be offered the option of selecting one or more races.

If an individual did not provide a race response, the race or races of the householder or other household members were assigned using specific rules of precedence of household relationship. For example, if race was missing for a natural-born child in the household, then either the race or races of the householder, another natural-born child, or the spouse of the householder were assigned. If race was not reported for anyone in the household, the race or races of a householder in a previously processed household were assigned.

Comparability of 2000 Census race data with previous censuses: Census 2000 race data are not directly comparable with data from 1990 and previous censuses. See the Census 2000 Brief, “Overview of Race and Hispanic Origin” at www.census.gov/prod/2001pubs/c2kbr01-1.pdf.

Residence data: Vital statistics compiled on the basis of the usual place of residence of the person(s) to whom the vital event occurred.

Socioeconomic status (SES): A measure of a person’s available advantages in comparison to others in society. The factors that make up socioeconomic status include income, wealth, education, and employment. In addition, some are investigating the link between perceived social status and health. A growing body of evidence indicates that socioeconomic status (SES) is a strong predictor of health. Better health is associated with having more income, more years of education, and a more prestigious job, as well as living in neighborhoods where a higher percentage of residents have higher incomes and more education.

Surveillance: The ongoing study of a condition, characteristic or disease, generally to detect changes in trends or distribution to initiate investigate or control measures.

Teenage pregnancy: A live birth, stillbirth or abortion occurring to a female under 20 years of age.

Trimester: A three-month period of time. First trimester care, for example, refers to care initiated in the first three months of pregnancy.

Very low birth weight: Weight of a fetus or infant at delivery which is under 1,500 grams (less than 3 pounds, 5 ounces).

Vulnerable: Susceptible to injury or harm. Those whose needs are not fully addressed by traditional service providers. People who feel they cannot comfortably or safely access and use the standard resources offered. They include but are not limited to those who are physically or mentally disabled, limited or non-English speaking, geographically or culturally isolated, medically or chemically dependent, homeless, frail/elderly and children.

Weeks gestation: The number of weeks between the last reported normal menses and the delivery of the fetus or infant.

White (2000): The 2000 census category “White” describes a person having origins in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who indicate their race as “White” or report entries such as Irish, German, Italian, Lebanese, Near Easterner, Arab, or Polish.

References:

1. Kansas Health Institute. *Racial and Ethnic Minority Health Disparities in Kansas*.
2. Center for Health and Environmental Statistics, Division of Health, Kansas Department of Health and Environment. *Kansas Annual Summary of Vital Statistics 2006*.

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